

AN
ESSAY

ON THE CURE OF
ABSCESSSES by CAUSTIC,

And on the TREATMENT of
WOUNDS and ULCERS;

WITH
Observations on some Improvements in Surgery.

ALSO

A New Method of introducing Mercury into the
Circulation, for the Cure of the *Lues Venerea* :

With the REMARKS of

Dr. Hunter and Mr. Cruikshank, Professors of Anatomy,
in Support of this Practice.

By P. CLARE, SURGEON.

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TO
PERCIVAL POTT, Esq. F.R.S.

P R E F A C E
AND

SENIOR SURGEON TO ST. BARTHOLOMEW'S HOSPITAL;

THE FOLLOWING ESSAY IS INSCRIBED,

AS A TESTIMONY OF RESPECT

TO

HIS PROFESSIONAL ABILITIES,

BY

THE AUTHOR.

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P R E F A C E.

THE writer of this Essay having seen wounds and ulcers treated by means quite opposite to each other, lenient and irritating, has formed his opinion in favour of the first, from which he has observed every advantage accrue to the patient.

Since this method of treatment, in his judgement, will conduce much to the benefit of society, an attempt to recommend and enforce it, he trusts, will meet with a candid reception from the public.

If it should be asked, Is it not the common practice to use lenient dressings? certainly; but it is not universal; antient prejudices being still retained by many old practitioners,

practitioners, and followed by some young ones, who do not consult their own reason, or cannot, by the forming of a just comparison, make a correct judgement.

This subject having been ably treated by Mr. Freke, the late Mr. Sharp, Mr. Pott, and other writers, much new information will not be expected; but, as their doctrines are highly useful, they cannot be too often inculcated for the benefit of young students who may not be in possession of their works, and who will find the science of healing amply discussed in the following pages, on the same rational principles.

Mr. Freke and Mr. Pott are strong and positive in favour of mild dressings, and of course in their aversion to caustical and painful applications to sores. Mr. Sharp (in pages 31 and 34 of his Introduction to a Treatise on the Operations of Surgery, on the subject of the Callous Ulcer, and in several other parts of his works) writes in behalf of the latter.

He

He observes a sort of middle path; yet, on an attentive perusal, I fear, he will be found much oftner inclining to corrosive than lenient dressings. Mr. Freke has written his Essay on the Art of Healing, with that manly spirit which accompanies those who are under the fullest persuasion and conviction, that their doctrine is right; and with an air of triumph he exclaims,

Si tibi vera videtur,

Dede manus; aut, si falsa est, accingere
contrâ.

LUCRET. lib. ii.

This being a public challenge, is it not strange Mr. Sharp, or some other surgeon whose practice is so strongly attacked, censured, and confuted, in Mr. Freke's admirable chapter on a Foul Scorbatic Ulcer, should never have attempted, in the course of thirty years, to have answered him? Is he then unanswerable? If so, is it not much to be lamented that the works of one so eminent as Mr. Sharp should still countenance the most painful system?

B

Mr.

Mr. Pott has always in my memory (since the year 1752) practised in the most lenient way, and may have done it long before Mr. Freke's publication, which was in 1748, when Mr. Pott was surgeon to St. Bartholomew's Hospital, and of great eminence in his profession. He has carried the mild system to a much greater extent and perfection than any of his predecessors, never losing sight of lenient remedies.

I am happy in every opportunity of giving the respectful testimony of a pupil to the merits of that great professor Dr. Hunter, whose indefatigable labours, and distinguished abilities in anatomy, surgery and the obstetric art, have justly exalted him to the highest rank in his profession. His anatomical, chirurgic and physiological lectures, explain the origin, nature and cure of a variety of disorders, are founded on rational, judicious principles, and have greatly advanced the art of healing.

True it is, preceptors are paid; yet there is a debt remaining where knowledge has been
been

been imparted (especially that knowledge by which we live) and gratitude to them, as to our parents, our best benefactors, requires these obligations should ever be acknowledged, although our opportunities may be too few, and life too short, to requite them. I must say, with Horace, to his good father, his preceptor,

Laus illi debetur, & à me gratia major.

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been imparted (especially that knowledge
by which we live) and granted to those
as to our parents, our best benefactors,
requiring a like obligation should ever be
acknowledged, although our opportunities
may be too few, and life too short, to re-
quite them. I wish you were Florence, to
be good father, his people.

I am ill debet, &c. no gratification.

My dear mother, I am very much
affected by your letter, and I am
very much obliged to you for it.

I am very much obliged to you for
your letter, and I am very much
affected by it. I am very much
obliged to you for it, and I am
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AN
E S S A Y
On the CURE of
ABSCESSSES by CAUSTIC, &c.

On the nature of Abscesses, their formation, and cure.

AN abscess is a collection of matter seated in the adipose or cellular membrane, the immediate substance betwixt the muscles and the skin. Its formation and progress is usually attended with great pain and fever. It is rarely formed without rigors, which are the efforts of an oppressed circulation to throw off its load. It advances gradually towards the skin to be expelled; whereby Nature intimates to the surgeon what line of conduct he ought to pursue; either to make an aperture to give vent to the matter, or to leave that to her, which she will effect

effect sooner or later, according to the state and circumstances of the constitution. How very improper then must be any attempt to oppose her salutary intentions ! Yet this is often done at the desire of the timid patient, who wishes to avoid the pain and trouble of a wound ; but is obliged at last to submit to Nature, who will have her course, and, when left to herself, has been known to perform excellent cures.

Every abscess is attended with inflammation, but every inflammation does not terminate in an abscess, which, being the crisis of some internal disease, must not be repelled ; but a simple inflammation, from an external cause, often is, and may be dispersed with the utmost propriety.

Nature is assisted in her purpose of suppuration by emollient fomentations and cataplasms, when the skin is tense and painful ; when not, a warm plaister is as effectual, the patient at the same time being supported by a nutritious diet

diet and cordial medicines, when the pulse and other symptoms indicate the want of them.

Fomentations are of peculiar service, because their subtle vapours penetrate the pores of the skin, which, being very minute, refuse the admission of oil or water, on account of the density of their particles; for this reason fomentations give relief when other applications fail.—The stupes should be applied as dry and warm as possible.

When the fever is high, we need not add to it; neither must it in general be abated by evacuations, since the fever being brisk, the matter is sooner formed, and then, but not before, will the patient experience relief.

The late Mr. Sharp, in his Introduction to a Treatise on the Operations of Surgery, page 10, justly observed, “Bleeding sometimes advances the supuration of an abscess, but this practice is to be followed with caution.”

Prudence

Prudence directs us not to be satisfied with a partial collection of matter, (lest there should be a second deposit), but to wait till the whole is compleatly formed, which is known by a palpable fluctuation on compressing it, and by the fullness and thinness of the skin. Vesications of the cuticle often appear at this time, which portend an approaching aperture; and that this is the critical season for making it, unless it should be deemed more advisable to leave this opening to be effected by Nature.

As there is no rule without an exception, so in abscesses we must not always stay till the tumour is fully suppurated; but if we find it receding, and the patient's health affected by the absorption of the peccant humours into the habit, we are fairly warranted in making an earlier opening.

When an abscess breaks of itself, there is usually a small orifice, which
does

does not prove sufficient to discharge the contained matter, and heals before it has produced the desired effect; a circumstance which made it expedient for the profession to devise the means of opening abscesses more freely, that there might be no confinement of the matter within the skin. For this purpose some practitioners prefer the knife, others the caustic. The advocates for the former dwell much, and with great reason, on the utility of preserving the skin as much as possible, which is done by a simple division of it, when it recedes only for a time, resuming its former state as the wound heals, and frequently without losing many of its fibres. This occasions less scar than the caustic, which totally destroys a certain portion of the skin, that can only be supplied by the generation of new, inferior in quality, and less commodious than the old, as every large cicatrix is apt to chafe, and *tuck down*, owing to the loss of the connecting membrane, which yields an agreeable pliability when we

press that skin which Nature formed at first with so much perfection.

Though every judicious and humane practitioner will wait till the abscess is fully suppurated, that the skin may have lost its painful sensibility before he makes the incision, yet there is so great dread of the knife in some minds, that they cannot be persuaded to submit to it; many of the profession therefore have substituted the caustic as a less terrifying and much easier mode of effecting the needful aperture.

There is no better caustic than the paste of the London Dispensatory. "It is prevented from spreading by cutting an orifice in a piece of sticking-plaister, nearly as big as you mean to make the eschar, which being applied to the part, the caustic must be laid on the orifice, and preserved in its situation by a few slips of plaister placed round its edges, and a large piece over the whole;"

whole;" a bandage is likewise a necessary security.

The caustic being placed on the tumour, and continued there three or four hours, by a gradual heat, causes a destruction and mortification of a certain portion of the skin and integuments. This operation is attended with different degrees of pain, according to the condition of the skin, which, in a cool and uninflamed state, bears the caustic much better than when in a contrary one; for at that time the slightest pressure of the finger hurts exceedingly; how great then must the suffering of the patient be on such application in that critical state of extreme sensibility! It ought ever to be avoided by those who wish not to forfeit their pretensions to humanity.---Caustics have often been called *drawing plaisters*, applied as such, and passed undiscovered.

A principal advantage of the caustic is the opening it makes for a free and complete discharge; and this treatment

is very rarely followed by sinuses, jagged lips, or callous edges, which often appear after the use of the knife, even in a good habit of body.

A puncture with the lancet sometimes discharges the contents of an abscess, and effects an easy and perfect cure; but the uncertainty of success causes a preference to be given to a larger opening.

Sinuses are frequently cured by compress and bandage, especially when assisted by proper medicines. These failing, recourse must be had to incision, which surgeons make freely at first to expedite the cure, and to prevent the disagreeable necessity of a repetition.

For this purpose, Mr. Sharp and Mr. Pott recommend the knife, in preference to the scissars, which they condemn in the strongest terms, on account of their pinching at the same time that they cut. Besides, the edges of wounds, thus divided, tumify, are generally

generally painful for several days, and indisposed for healing. The caustic-paste is much easier, and as effectual as incision.

Counter and depending openings, judiciously made, are often of great service where there are sinuses, and preserve skin. It is the practice with some surgeons to cut away an oval or circular piece of the skin in abscesses, after having first made a longitudinal incision; which is indeed recommended by Mr. Sharp, "where there is much discoloured skin;" but, though greatly discoloured, it will often recover, or, if much diseased, will perish of itself: this method therefore can seldom be necessary; and seems, notwithstanding such respectable authority, not to have sufficient reason for its support,

When the caustic is removed, the matter sometimes bursts forth; when it does not, it may be set at liberty by the introduction of the lancet, which is not
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at all felt, if the caustic has duly performed its office. The eschar commonly separates in five or six days ; to effect which purpose, some surgeons apply hot terebinthinate dressings, conceiving them to draw, and mechanically help the separation ; when in truth this event is produced by the granulations underneath, which shews it to be the act of Nature, external dressings availing little ; but internal medicines, by adding vigour and impulse to the circulation, are of use on that principle.

Chirurgical writers describe wounds and ulcers as going through three stages in the course of their cure,—*digestion*, *incarnation*, and *cicatrization*, to which some add mundification, which is betwixt the first and second, appertaining to both,

In the first, *digestion*, oily dressings are most in use, and these should be applied warm, but never hot ; it being an established position, to the honour of modern

dern surgery, that the most mild applications are the best; painful dressings made of hard doffils, and loaded with corrosive powders, being deservedly exploded after a long and mischievous use of them.

The second stage is that of *incarnation*, in which the wound is filled with granulations of flesh, and has a florid aspect, which is an excellent symptom. When these are luxuriant, and rise above the edges of the wound, it has been usual to call such an appearance a Fungus, and to apply corroding medicines to reduce it to a level with the skin; but these commonly give great pain, and protract the cure. Happily they are now laid aside in a great measure, authors and practitioners of the greatest abilities declaring, that dry lint with moderate pressure is sufficient to restrain such luxuriance.

Mr. Sharp very sensibly and humanely observes, with regard to the fungus in a

wound made by a sharp instrument, where there is no indisposition of body, "that dry lint only is generally the best dressing: at first, it stops the blood with less injury than any styptic powders or waters; and afterwards, by absorbing the matter, which in the beginning of suppuration is thin and acrimomous, it becomes, in effect, a digestive. During incarnation it is the softest medium that can be applied betwixt the roller and tender granulations; and, at the same time, is an easy compress upon the sprouting fungus."—This is perfectly lenient, and comprises the whole process of healing in few words.

Mr. Freke, in his treatise on the Art of Healing, published in the year 1748, was the first writer who opposed caustic and corroding applications to fungus in ulcers, and recommended warm poultices to promote perspiration in the part affected; remarking, that callous edges are best subdued by relaxing means: in this mild doctrine
he

he is supported by Dr. Hunter, Mr. Pott, and other surgeons, who have laboured to establish it for the ease as well as benefit of their fellow-creatures. Formerly surgeons pared away callous edges with the knife; and what was the consequence? After the most excruciating pain, the callosities returned; the cause, namely the bad habit, remaining, and an irritation being kept up inimical to healing, which is best advanced by the perfect tranquillity of the part affected.

Mr. Sharp says, Callosities are to be touched for a few days with the lunar caustic, or *lapis infernalis*, as less painful than the knife; and the easiest method of removing *loose lips* (though on other occasions he prefers the knife) is *cutting them off with the scissors*. P. 31.

When excrescences have arisen in venereal ulcers, he says, "he has pared them with a knife, but the flux of blood is ordinarily so great, that he does not

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recommend

recommend the method, and rather prefers the escharotics: Those in use are, the vitriol, lunar caustic, the *lapis infernalis*, and more generally the red precipitate powder; but even in this case, he does not think that powder the best remedy: for he says, though it is always an escharotic, yet the *pulv. angelicus*, which is a composition of precipitate powder and burnt allum, eats deeper, and, he thinks, is preferable to the precipitate alone." P. 34.

The carious ulcer with fungus cannot be cured without a previous exfoliation of the diseased bone. See the same author, p. 44.

Mr. Freke says, page 107, " All writers on this subject have agreed to subdue funguses only by drying vitriolic or caustical applications; whereas my method is quite contrary to what is universally laid down; which is, that greasy or mucilaginous relaxing medicines do ever create funguses. I readily

“ I readily own the proposition to be
 “ true, for which reason I make use of
 “ a mucilaginous cataplasm to relax
 “ these scirrhus diseased parts, and
 “ thereby make them discharge their
 “ enemy. And in these cases I let the
 “ fungus increase as much as it will.”

Again, page 110, “ I never think of
 “ destroying it by vitriol or the like, but
 “ rather choose to give a full loose to
 “ the parts, finding them healing faster
 “ from the edges when the strangula-
 “ tion has been taken off, by sweating
 “ out that which occupied spaces which
 “ did not belong to it, rather than by
 “ art, cropping off the top of the fun-
 “ gus by vitriol, &c. and thereby forc-
 “ ing it to heal, whilst it remains cal-
 “ lous and diseased.”

These observations, and many others,
 the result of long experience in St. Bar-
 tholomew's Hospital, as well as an ex-
 tensive practice elsewhere, shew Mr. Freke
 to have been a man of a penetrating ge-

nius and sound judgement. They are his own original ideas, and form the basis of the modern mild approved practice, which without doubt will stand the test of future ages.

Oil, either in its liquid form, or modified with wax or diachylon, is an universal and proper dressing for sores.

Healing is the act of the constitution, and depends on internal impulse, not on the specific quality of an unguent, which serves principally to defend the part affected from the injury of the external air. Oil is artificial pus, which last, when of good quality and consistence, protects and comforts the tender wound; when acrid, it causes pain and mischief; in which case oil mixing with the matter, and correcting its pernicious quality, gives ease. When the pus is mild, yet too redundant, dry lint absorbs it, keeps the sore clean and easy, and may be continued till the discharge becomes so small as not to moisten the
lint

lint sufficiently to prevent its adhesion. This should be laid light and thin on the middle, not covering the edges of the fore.

Some may be induced to remark, that the doctrine here laid down, with regard to ointments, being plain and simple, ought not to be divulged, as it may encourage improper persons to interfere in cases of surgery, to the injury of the public and the profession; but the latter can never be hurt by such pretenders, since they cannot judge of the good or bad condition of wounds, and therefore they can yield their patients no satisfaction. Certainly, in matters of physic and surgery the merit consists more in the judicious application of remedies, than in the remedies themselves.

Cataplasms are exceedingly useful where there is tension and pain in wounds; for where the discharge is acrid, they absorb the offending matter, and by their warmth and consistence
give

give ease, aiding Nature in her healing intentions.

The fears of the patient have often prevented incisions, particularly in abscesses of the breast, the female sex being disposed to try every method rather than endure the knife; and such cases have happily succeeded by the repetition of emollient poultices causing an opening; which, by gentle pressure and patient perseverance, has effected an entire cure, thereby encouraging the humane surgeon to follow the example, and often to forbear the use of incision.— The ingredients of a poultice should be boiled together and stirred till it quits the sides of the vessel and adheres to the spoon: it should have an unctuous surface, and be applied warm.

Heretofore, surgeons were, with more justice, dreaded for their operations and painful dressings, than perhaps revered for their skill; antient surgery resembling modern farriery, and being, as
Mr.

Mr. Pott observes, "the doarfe, and loaded with a farrago of external applications, some of which were unnecessarily painful." Patients were then confined long, through injudicious treatment; and wounds (which would have healed, if left to themselves or treated with lenity) proved inveterate and obstinate through precipitate, vitriolic, and other still stronger corrosive dressings. Thus fores were rendered phagedenic, from which state they were at length retrieved by the removal of noxious irritating means, and by a recourse to the emollient system.

Formerly, whenever any enlarged glands protruded in wounds, it was the practice to attack them with the most powerful escharotics; and where these failed, recourse was had to extirpation by ligature, or the fingers. These glandular appearances are considered by modern surgeons as no unfavourable symptoms, and often form the basis of a cure when treated with lenity. They

are frequently to be seen in inguinal and other abscesses.

We cannot adduce a stronger proof of Nature's propensity to heal, than the instance of the great difficulty with which a pea is retained in an issue; or a tent in a wound; where, in spite of the utmost exertions from pressure and bandage, Nature oft prevails, throws out the offensive extraneous body, and heals the orifice,

In like manner will wounds incarnate in defiance of mal-practice. Nature one day puts forth her granulations of flesh, which are the proper materials for the foundation of a cure; the next, perhaps corrosive medicines are applied to destroy these luxuriant granulations, falsely called Fungi, or proud flesh; and thus is Nature counteracted in her laudable endeavours. The absurdity of such treatment is evident to every unprejudiced observer!

Such

Such formerly was the practice; the modern surgeons in general have more wisdom and humanity; they know the easiest dressings are the best, and that Nature will do the business herself, if not interrupted by those who think they can accomplish every thing without her assistance.—Mr. *Freke* says, 'page 126,
 "A surgeon is but a scavenger to Nature: for, if the various parts of the blood did not supply the many losses of the body, what could the surgeon's art do for his patient?"

What the ancients endeavoured to effect by painful escharotics externally applied, the wisest of the modern professors accomplish by internal, invigorating medicines; correcting the habit; knowing that to be the only rational method of cure which strikes at the cause of the evil; for, that once removed, the effect ceases.

The last stage is that of *cicatrization*, which compleats the cure.

Sores are healed by the fibres of the skin shooting across from the edges; first, by the elongation of the old skin; then, by the formation of the new; and sometimes from different small points (like islands) in the wound, which in this case cicatrizes fast.

Critical Remarks on precipitate and other Dressings; with cursory Observations on some late Improvements.

MR. Sharp, in his *Introduction to a Treatise on the Operations of Surgery*, page 32, says, “the precipitate is a digestive, when mixed with any ointment;” that being, in his opinion, much less painful and corrosive, than when sprinkled on a sore in powder; for he says, “as it is a strong escharotic, much of it can never be used without making a slough, and therefore continuing it day after day will be making a succession

“ fion of sloughs, keeping under and
 “ destroying the little granulations of
 “ flesh, which in their growth would
 “ elevate and push off the first slough.”

Hence it should seem that Mr. Sharp disapproved of precipitate dressings, as contrary to the principles of healing; yet he has not entirely discarded them, leaving the merit of that to his successors.

Mr. Sharp raises an objection to the caustic on this ground, “ that we cannot have the advantage of dressing properly till the separation of the slough, which often requires a considerable time, so that the cure must necessarily be delayed.”

The same gentleman says, in page 19, “ Sloughs are flung off by the sprouting flesh underneath, which fills up the cavity at the same time that it discharges the eschar.” The cure then does not seem to be delayed.

He further remarks, " The pain
 " of burning continuing two or three
 " hours, which a caustic usually takes
 " up in doing its office, draws such
 " a fluxion on the skin, as sometimes
 " to indispose it very much for healing
 " afterwards."

Daily experience does not confirm this opinion, since no wounds heal more kindly than those made by the caustic. Mr. Else, surgeon to St. Thomas's hospital, recommends the caustic for the radical cure of the hydrocele, in preference to incision, and relates several instances of it's success,

Lest the writer's meaning should be misunderstood by those who are not of the chirurgical profession, and he should appear an advocate for and against the caustic, he is desirous of offering a few words by way of explanation. He approves of the caustic paste as the means of opening many abscesses, but objects to caustic and corrosive dressings as unnecessarily

necessarily painful, and highly injurious to almost every open wound. In some cases perhaps incision is preferable, in others the caustic. The latter will always find many friends amongst the timorous, who will not be disappointed in the use of it. It is never applied to the face, for an obvious reason.

Some practitioners justly observe, that much mischief is often done by the improper mode of dressing wounds made by incision, either by distending them with too large and hard dossils, or by dressing them too superficially; but the sore from a caustic is liable neither to one abuse nor the other, and the cure advances of itself, requiring the least assistance imaginable. This surely is an argument strongly in favour of the latter. Another of as great weight is, that an opening of the size of a shilling, or even less, made in a depending part, will often cure as effectually as an incision of several inches of the skin, which I have known frequently, (as have others

of

of the profession), particularly in large abscesses near the rectum, called incomplete *Fistulæ*; and in other parts also.

Mr. Sharp says, "When issues are made, or bones exposed, the eschar should be cut out immediately, or the next day."—This operation must give great pain to the patient; and some to the surgeon also, if he possesses those tender feelings, for which Mr. Sharp was always esteemed, as well as for his judgement and singular dexterity in the operative parts of surgery.—The eschar need not be cut away.—One or more kidney or French beans, with a proper compress and bandage, will adapt themselves, immediately after the separation of the eschar, with very little pain; and, on account of their form, are preferable to peas, which penetrate so deep into wounds, as not only to be painful, but injurious.

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The above animadversions are made with a design to throw light on the healing science, and not invidiously to find fault with what this gentleman has written.

On Healing by the First Intention.

IF there needed any further proof how little necessary the tribe of epulotic ointments are in good constitutions, we might instance the case of fresh wounds, where there is a simple division of the skin and integuments, the lips of which being brought into contact with each other, and retained so by bandage, will heal in few hours by *the first intention* without applying any remedy to the part, the blood being esteemed the best medicine and sufficient for the purpose, preferable to the solutions of various gums in spirits, called Balsams, which many are fond of using, though these only give the patient pain, without rendering him any benefit in return. Mr. Freke recommends the use of balsams

sams to lacerated wounds, “as a varnish to cover such small filaments, or lacerated parts of the wound, as the air without it would immediately take hold of and mortify.” P. 128.

During my apprenticeship with Mr. Pott, a youth, about twelve or thirteen, living at the Dog Tavern, Garlick-hill, had the misfortune to fall upon the edge of a case knife, which penetrated the left lobe of the lungs, the air from which nearly extinguished the flame of a candle. The hæmorrhage from the wound was considerable, till Mr. Pott placed the lad on his back, when the bleeding stopped. It was dressed lightly with dry lint; but fearing it might bleed internally, Mr. Pott made an unfavourable prognostic, and was most agreeably surprisèd to find his patient had no bad symptoms. He recovered in less than a fortnight; whence it was concluded the balsamic quality of his blood had effected the cure. He was bled at first, to guard against the symptomatic fever.

Of

Of all the modern improvements in surgery, none is of greater importance than the general disuse of needles and ligatures, in fresh wounds, where there is no great lapse of the skin. In these cases, one suture or more are sometimes absolutely necessary; as in wounds of the lip, scalp, and other parts.

Where the lips of wounds can be brought nearly or quite into contact with each other, adhesive plaister and retentive bandage (absurdly called *the dry suture*) are sufficient, and save the patient an infinite deal of pain and trouble.

The following case, from the *Consultations* of the famous Mons. Le Dran, is inserted to shew what little aid Nature requires in fresh wounds made by incision, in order to effect a speedy reunion of the divided parts, by the *first intention*.

“ A cook holding a pointed knife with a very sharp edge, by accident cut his

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fore-

fore-finger almost off. The point of the knife at once penetrated through the inside of the hand, the capsula of the joint of that finger, with the metacarpal bone that sustains it; and the edge being turned towards the thumb, all the part between the edge and the thumb was divided in such manner, that the finger was held on only by a small part of the capsula and the skin on the side of the middle finger. The finger hanging in this manner, he came and desired me to cut it off. What ought to be done on this occasion?"

To this question he answers, "As the finger is not entirely cut off, great care must be taken to save it, and endeavours should be used to procure its reunion as soon as possible, although the capsula is not only wounded, but even above half divided.

"Some *dry futures* will be sufficient for that purpose, and Nature must do the rest, assisted by proper dressings, and the
part

part being kept perfectly still. The skin therefore must be kept together by the *dry sutures*, and the finger fixed in its place for several days by pasteboard splints, the whole kept on by a roller, put on in such manner that the finger should be half bent, which is most commonly its position. It is true, the flexor and extensor tendons being both cut, the finger will have no motion; but after it is cured, if care is taken to keep it bent for a fortnight, it will always remain so, and it will not only be without inconvenience, but sometimes of use, and without any deformity. I have known a wound of the same kind perfectly reunited in three days, by the care I took to bring the divided parts exactly together, and keeping them confined in the manner before-mentioned."

It is well known, sutures are only temporary, and break away as the wound digests; are introduced with much pain, exciting inflammation, and

sometimes fever, whereby the cure is protracted.

The operation for the bare-lip may be performed without needles, by means of adhesive plaister and a bandage, the threads of which intersect each other, drawing in opposite directions, bringing the divided edges into approximation, and retaining them in that state. The incised lips are to be kept in their due position, first by cross slips of plaister, and finally secured by this sort of bandage, which Dr. Hunter always exhibited in his lectures. Mr. William Deas, surgeon to the Dublin hospitals, also proposes this method. See Medical Commentaries, N^o. 19; where Mr. Deas has likewise published a cure of a cancerous lip by the same means: both which practices Dr. Hunter recommended to his pupils more than twenty years ago.

The ACTUAL SUTURE.

THE painful method of taking up the arteries with needle and ligature after amputations, was substituted in lieu of cauterising or searing the vessels with a hot iron, the horror and pain of which is beyond description. The former is mild when compared with the latter; yet so very acute is this, and attended with such bad consequences, that the profession are humanely endeavouring to substitute some easier method in its stead. Hence arose the invention of the *agaric*, styptic tinctures and powders without number, which have been tried with different degrees of success; but having sometimes failed, and thus endangered lives, they have at length been discarded. We, however, may hope to meet with something effectual for this purpose, since we are daily informed of fresh discoveries.

The tenaculum is now much used, and has the advantage of the needle and
ligature,

ligature, which give exquisite pain by including the nerve ; no wonder therefore that the tenaculum is coming more into practice. This instrument has been long made use of for the smaller arteries after amputations, and is now found to succeed even in the larger.

IT will be no deviation from the healing art to relate the following case ; at the same time it will shew that the knowledge of a disorder is sometimes half the cure.

A young gentleman, labouring under a continual diarrhæa, which had reduced him to the last stage of an hectic, sent for me, on the presumption it might prove a case in surgery, by the desire of the medical gentlemen who attended him. The quantity of water by the urethra being very small, made us conclude there was a communicating aperture betwixt the urethra and the rectum,

tum. This being proved beyond a doubt, we passed the silver flexible catheter, and drew off more urine than had been discharged by that passage for some time before. It being deemed necessary an instrument should be left there to bring away the water at all hours, we substituted the hollow bougie, which gave no pain, and afforded Nature an opportunity of healing the wound by taking away the preventing cause, the incessant irritation from the salts in the urine. He was cured in a month, and recovered his former health and vigour. The bougie in this instance, as in many others, was very beneficial; yet it may not be amiss to give an intimation of the danger I have known from passing even the most mild bougie on *aged* persons labouring under a suppression of urine; how great then must the risque of that patient be, who should presume to pass a common wax candle, called, in French, *Bougie*, thinking to remove this complaint by violence! Two cases of
this

this kind came within my knowledge; one was that of a person of thirty years of age, who desisted from the practice before he had done himself any considerable mischief; the other, a gentleman of threescore, who, in consequence thereof, unhappily died of a mortification.

Observations

Observations on the treatment of compound fractures.

FRACTURES are called *compound*, when there is a wound made by the bone: when the fracture is attended with a wound not made by a protrusion of the bone, it is called *complicated*; a case by no means so dangerous in general as the compound fracture. The hazard is judged to arise principally from the admission of air into the injured part; the modern method of cure is therefore to exclude the air as much as possible, and by this method to reduce the *compound* to the state of a *simple* fracture. This is Mr. Freke's opinion, which he gives in the following words, page 129. " It is owing to the air that
 " a compound fracture differs so greatly
 " from a simple one: for, though the
 " bones in a simple fracture be ever so
 " much lacerated, it seldom or never,
 " with proper care, fails of doing well;
 " but if the skin be broken ever so little,
 " if the air be admitted to some extra-

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" vafated

“ vasated blood, it makes a terrible dif-
 “ ference betwixt one fracture and the
 “ other, which every knowing practi-
 “ tioner finds there is, from the causes
 “ before given.”

By the exclusion of the air many compound fractures, of late years, have been cured in a short time, and with little trouble; recourse having been had to phlebotomy and proper medicines; such as opiates, bark, &c.

The common external remedies in these cases have been oily, relaxing liniments and poultices, which requiring frequent renewal, have exposed the fore to the bad influence of the air, and encouraged too copious a discharge; in time, reducing the patient's strength exceedingly; insomuch that the bark, and other restorative cordials, given with the greatest propriety and most liberal use, have not been able to prevent the patient from sinking.

Sensible

Sensible of this circumstance, both English and French surgeons have, for some years past, adopted astringent and spirituous embrocations in compound fractures, moistening the dressings and bandage frequently therewith, and forbearing to renew them as long as possible, that the external air might not gain admission, knowing the ill consequence of it, and how much the patient's safety depended on this precaution. Sinuses, so common in these cases, have been hereby prevented, as well as long confinement and delay; for it is well known that the callus, whereby the fractured extremities of bones are united, cannot form whilst the matter lodges, and causes a continual interruption to Nature in her important work.

It has been generally remarked, that the cure of compound fractures does not succeed so well in the London hospitals as in the country, where the air is more pure and conducive to health. Another cause assigned, is the free and

intemperate way of life of those, who, by indulging themselves too much in spirituous liquors, impair their constitutions, and, when an accident befalls them, their blood and juices are too much vitiated to admit of a cure: hence a mortification ensues; and even the bark, that sovereign remedy, fails in its wonted relief.

A remarkable instance of the good effects of this treatment occurred some years ago in the person of Mr. Pott, who unfortunately met with a compound fracture of his leg by a fall from his horse, at the time of my living with him, and of course I was a witness to the proceedings in the cure. The accident was treated like a simple fracture, and the air excluded.

Mr. Pott's age being betwixt forty and fifty, and his constitution good, the wound healed without any sinus, and the callus was compleatly formed in eight or ten weeks. If relaxing means
had

had been used, such as poultices, which are improper for the reasons before mentioned, it is a question if this gentleman's many subsequent services would not have been lost to the community.

Previous to his own accident, Mr. Pott had treated cases of this kind in the hospital with great success; amongst which was that of a boy of eight or ten years of age, who had a fracture of the radius, which protruded through the skin. It was bound up as a simple fracture, and the wound was healed in a fortnight; a circumstance which gave Mr. Pott and his pupils great pleasure, they having interested themselves much in the event.

Two other cases in private practice have since fallen under my care, and were successfully treated in this way. One of them was a gentleman of the Stamp Office, forty years of age, temperate, and of a spare habit. His leg was fractured, and did well in eight weeks without

without any bad symptoms. The other was a gentlewoman of fifty, and of a gross habit, who recovered in twelve weeks by the free use of bark and opiates. Here the symptomatic fever ran very high at first.

These patients were laid on their side with the knee bent, the position recommended by Mr. Pott, and also by Mr. Sharp, another eminent surgeon to St. Bartholomew's hospital, a gentleman of great professional skill and philanthropy, who, in *An Account of a new Method of treating fractured Legs*, has favoured the public with elegant plates of his useful splints.

By this position, the muscles are entirely relaxed; in the old way, they were always upon the stretch, and in a state of action, which occasioned frequent and sudden spasms, attended with pain and restlessness, thereby distressing the patient and retarding his cure.

Since the above was written, I have been favoured with the case of a compound

pound fracture of the fore-finger of a smith's apprentice, in the parish of St. Clement Dane in the Strand. The bone was broken obliquely, so that the two extremities formed sharp points. The divided part was suspended only by a very small portion of the skin; and being instantly replaced in a proper position by an eminent surgeon in the neighbourhood, defended by plaister, splints, &c. by the exclusion of the air, and the happiness of a good constitution, the entire use of the finger was restored in a few weeks. There being at first, all but an entire solution of continuity of the skin, this case would have been despaired of by some who have less faith, because they have less knowledge, in Nature's healing powers, than the gentleman to whom this boy fortunately applied for relief.

I have known a similar accident to the above, where a finger was evidently lost by the application of a poultice immediately to the fore, which prevented

its healing by *the first intention*, and was injurious also on account of its weight.

For further information, see a curious case of a Compound Fracture, lately published by the ingenious Mr. Mudge, of Plymouth, who recommends these to be treated like Simple Fractures, and to exclude the air *.

The same subject is amply and ably discussed by Mr. Pott, in his *General Remarks on Fractures and Dislocations*.

* I think it necessary to declare, that the MS. of my Essay was in the hands of Mr. Pott, Mr. Sharp, and a few other friends, in the months of July and August last; and that I never saw or heard of Mr. Mudge's publication till the 4th of this month, when Dr. Hunter recommended it to my perusal,

On

On RUPTURES.

THE *clyfma fumofum*, or tobacco clyfter, is often employed in the cure of *ſtrangulated herniæ*; and a very painful and dangerous operation may be prevented by a timely recourse to this excellent remedy. Some ſurgeons prefer the infuſion of tobacco to the fumes, which are to be injected glyſter-wiſe, and both are occaſionally ſucceſſful. See Mr. Pott's *Treatiſe on Ruptures*, where he recommends the infuſion to be made by pouring one pint of boiling water on one drachm of tobacco,

The particular machines for this purpoſe (ſome with bellows and a worm tube, others with a large ſyringe) convey an amazing quantity of the virtues of this powerful anodyne and narcotic plant into the inflamed inteſtines, frequently procuring a copious evacuation of their indurated contents, and a re-

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turn of the hernia, when all other means had been tried without success.

Mr. Pott, in his *Chirurgical Observations*, p. 117, recommends the application of cold discutients, rather than warm relaxants, such as poultices, which have no effect beyond the skin, and therefore cannot remove the stricture made by the tendon. Of the first class are solutions of *sal ammoniac. crud.* in vinegar, the *sp. mindereri*, *acet. lythargirit.* and such like. He likewise cautions practitioners against handling herniæ too much in order to procure a return of them, as such attempts are hazardous when the intestine is highly inflamed, and may probably accelerate a gangrene.

Mr. Sharp writes thus: "I believe I may venture to say, that cold water, applied to this species of inflammation, has a dangerous tendency."—See his *Critical Enquiry*, page 19.

It

It behoves every patient who has a returnable rupture immediately to have a proper truss, to prevent a descent of the parts; and it should be constantly worn; since, without this security, he would be in hourly danger of his life. — This caution is of such importance, that it cannot be too often repeated.

*A New Method of introducing Mercury
into the Circulation, for the Cure of
the Lues Venerea.*

IT seems universally admitted that the *lues venerea* is seated in the blood, and that the removal of it is therefore to be effected by the introduction of mercury into the circulation, whence this virus is expelled by the secretory and excretory, the salivary, urinary, cutaneous, or intestinal glands. I am induced, from observation, to think this disease is best subdued by the salivary discharge; since, when these glands are affected, and the saliva flows, the breath becoming fetid, and the gums tender and inflamed, we are thought to have convincing proof of the mercury's having entered into the blood. At this critical juncture, the venereal symptoms, whether tumors, eruptions, or pains, begin to abate, till at length the cure is accomplished.

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The first object therefore is to procure the admission of mercurials into the blood vessels. For this purpose, some prefer internal medicines; and many, external mercurial frictions in the form of unguent.

Internal mercurial medicines are usually given in Pill or Bolus. Some of my patients having strong averfions to both, I was induced to give them the *merc. dulc.* in a few drops of fyrup, and was surprised to find their mouths much sooner affected by this than by any other way: —a fact I further afcertained by repeated experiments on myself.

The medicine was the fame I gave others in pills. My dependance was on the fubftance, not the form. Why then fhould there have been fo long and violent an attachment to a form which few relifh, though the pills are ever fo fmall? It will fcarce be denied, that there is a ftrong probability of not mixing

ing the ingredients so accurately that there shall not be some difference, as also in dividing them afterwards, especially if the mass be large ; add to this the uncertainty of their dissolution in the stomach.

Chymical preparations of mercury, unless guarded with opium, (a deleterious drug,) vellicate and injure the stomach and intestines, organs most essential to health. Then why should we not make trial of another method, not unreasonable in speculation, and reducible to practice? There have been so many instances of it, that no surgeons will deny the absorption of mercury into the blood when applied in powder to a *fore*, a part which has lost it's covering, the external skin. May not mercurial powder then be absorbed when applied to a part of the body where there is no outward skin? My experience tells me, it may; and I have raised the required sort of fore mouth,

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flux of saliva, fetid breath, and tenderness in the gums, by the patient's rubbing with his finger, moistened with saliva, *mercurii dulcis sexties sublimati gr. iii. vel iv.* every day on the inside of the cheek, on and around that place where the parotid (salivary) duct opens into the mouth; the diseases were accordingly cured. One or two grains applied behind the preputium, or to the labia, will sometimes give a mercurial breath and slight ptyalism, and, joined to the other, will greatly advance the cure. This may be daily used, moistened with saliva. It is probable the latter method will cure the gonorrhœa also, if the body is kept soluble. It may even act as a prophylactic.

Let us now compare the two sorts of frictions.—The internal friction on the cheek requires only a small surface and slight exertion. It is neat, commodious, may be soon performed, and is sure, if continued, to affect the mouth and other secretions.

secretions.—The external friction with unguent is exceedingly disagreeable, generally inflames the skin, and occasions delay by a temporary discontinuance on that account. Sometimes it will affect the mouth, sometimes it will not; nor indeed any other of the secretions; for which reason no certain dependence can be placed on it.

Previous to the friction, it is particularly proper that the patient should be directed to rinse his mouth with warm water, to wash away the mucus from the respective glands, that the surfaces may more readily absorb the powder.

The experiments I have made of this new mode have satisfied my mind that it is practicable. I should have made many more trials, but for the visible deviation from the usual method; which circumstance might have drawn forth complaints of trying experiments, and rendered me obnoxious to censure. I
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should be glad the profession (who certainly are the only people duly qualified) would prosecute these enquiries further, and I trust they will not be disappointed in the result of them. I have been somewhat discouraged in publishing these remarks on the use of mercurials, by some of my chirurgical friends, and it may be a justice due to them; to say so; yet being strongly persuaded of the truth of what I have advanced, I knew not how to forbear communicating my observations to the public; this mode of practice being at least as safe as any other, infinitely more expeditious, and I trust will be found quite as effectual, which, I hope, will be considered as a sufficient apology for the publication. All the other methods at times stand in need of assistance; this then will be a useful auxiliary; as such let it be tried at first, and when introduced I am persuaded it will be found sufficient of itself to cure every stage of

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the disease, and in the most eligible manner.

I am aware it will be said, the mercurial powder passes into the stomach, and effects the cure in the usual way. Even if this was the case, the patient would more certainly be cured than if he took this medicine in pills, since these may pass through the body undissolved; but those who use the powder in the manner I recommend, refrain from swallowing the saliva till the absorption is effected, which I presume is done in a few minutes. A low regimen, however necessary in the gonorrhœa, ill accords either with the lues or its antidote, mercury: cordial medicines and a nourishing diet are requisite, and will increase the beneficial effects of this remedy.

Having observed that chymical preparations of mercury vellicate the coats of the stomach and intestines, when given in pills, a form disagreeable to
many

many patients, it will be said the powder must produce the same effect if it is swallowed. To this I answer, the powder incorporates with the saliva, which corrects the stimulating quality; and six or eight grains of this preparation will often produce less purgative effect than two grains in a pill.—A fortunate circumstance for every patient.

As the saliva becomes disagreeable, being kept some time in the mouth, the patient may take a little wine or other liquor, that he may not be obliged to discharge the medicine.

The celebrated, accurate and learned Dr. Astruc describes a Chancre thus:

“ At first there arises a small miliary,
 “ red, pointed, hot, itching pimple, the
 “ top of which, by degrees, grows
 “ whiter, and more even, and at last
 “ opens with a small aperture, from
 “ whence a small quantity of ichor is
 “ discharged. The erosion of the lips

“ continuing, the ulcer increases, is
 “ dilated, and forms a small cavity; it
 “ is surrounded with callosities more or
 “ less hard, and thick; it abounds with
 “ a thick, viscid, tenacious pus, and
 “ frequently produces ulcers of the same
 “ kind in the neighbouring parts.”

This complaint is not cured when
 the sore is entirely healed, if there is
 any hardness left in the skin; therefore
 the remedy must be continued till that
 dangerous symptom is subdued; else,
 the virus being in the blood, a relapse
 will ensue, and terminate in a confirm-
 ed lues, if not prevented by immediate
 recourse to mercury.

I have published the above descrip-
 tion of the true venereal chancre, to
 shew that it is the real ulcer, and not a
 simple excoriation from any other cause,
 which I have cured, and intend to cure,
 by this new method of administering a
 mercurial antivenereal remedy of long
 established

established reputation, and of undoubted efficacy, if fairly admitted into the circulation.

Mercurial fumigations to venereal ulcers, have been always a common practice; and their subtle fumes, imbibed into the orifices of the vessels, and received into the circulation, have often been of great service in these cases; and it is true likewise, that they have as often failed, and are now seldom used. I mention this method in particular as one that approaches to that of mercurial absorption in the manner I have recommended; which, I trust, on a candid and full investigation of the facts, will be attended with better success than fumigations.

I do not wish it to be understood that the mercurial friction is to affect the salivary secretion always; for I am well convinced it is liable to operate occasionally on all or any of the other glands.

I have

I have known it, in particular, act as a diaphoretic, and also as a diuretic, immediately after it was applied to the inside of the mouth; and my patient expressed his surprise at this effect, because he had drank nothing for some hours. This brought to my mind what Dr. Hunter has asserted in his Lecture on the Circulation of the Blood.

“ The circulation of the blood may be
 “ autoptically proved, being readily seen
 “ in some animals that are small (as the
 “ frog, for instance) by the help of
 “ glasses. The infusion of medicines,”
 he says, “ is another proof: for, make
 “ an orifice, and inject a fluid of a pur-
 “ gative quality, a diuretic, or any
 “ other, and it shall affect the particu-
 “ lar gland accordingly; that is, purge,
 “ vomit, salivate, go off by urine, &c.
 “ according to its nature.—Lastly,” the
 Doctor adds, “ injecting the vessels
 “ with wax, proves the fact clearly.”

I have taken this extract from a copy which I made three and twenty years ago, through favour of Mr. Davenport, who attended Doctor Hunter's lectures some years before me, and he made such a valuable collection of them, that the Doctor himself has consulted them by way of reference, and paid the possessor of this anatomical repository the compliments he justly merited on this occasion.

Mr. Davenport also gave me the particulars of the *compound fracture of the finger*, in page 55.

I will now proceed to shew, that the *absorption* of such medicines will produce the same effect as the *infusion* of them into the blood. The small globules in the *unguent. merc. cærul.* are well known to be absorbed by the pores of the *external* skin, as aqueous particles are imbibed by rubbing the face and throat with a wet towel, which notoriously allays

allays thirst, and of course it dries fast.—

Internal absorption is satisfactorily demonstrated by the nourishment afforded to the sick by *egg* and other *glysters*, when they are deprived, by any accident, of the power of deglutition ; a remarkable instance of which fell under my own observation in St. Bartholomew's hospital. A poor woman, in a phrenzy, cut her throat. She divided both the trachea arteria and the œsophagus ; and therefore the food, in its descent towards the stomach, would have endangered suffocation. She was the late Mr. Nourse's patient. He sewed up and dressed the external wound, and ordered glysters of eggs, &c. to be injected *pro re nata*. The woman lived a fortnight by this sustenance alone, (the aliment being received into the lacteals, the absorbent vessels of the intestines;) but, resolved on her own destruction, she at length accomplished it by violence on the wound, notwithstanding the utmost

most care and diligence were used to prevent her.

That I may not be thought to have hastily or inconsiderately published this doctrine of *mercurial absorption*, it becomes necessary for me to say, it is more than five years since the experiments and observations I then committed to writing were communicated to my friends; and that occasionally I have continued to make use of this mode with the desired success. Besides, (since the other parts of my Essay went to press) I have been honoured by Dr. Hunter and Mr. Cruikshank with several conversations on this subject. I am happy their ideas coincide with my own, and that I have an opportunity of rendering an essential service by the publication of them; which, with a curious case of a compound fracture, in the Edinburgh hospitals, related by the Doctor at his lectures, may be seen in the Appendix.

New doctrines of all kinds call for every possible authority to support them :

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indeed it is needless for me to dwell on the merits of such candid and able judges, who want no addition of praise, nor have any thing to fear from censure : such corroborating testimony affords me the fullest satisfaction ; though I presume not to question the right or ability of others to judge for themselves. —

“ Quot homines tot sententiæ.”

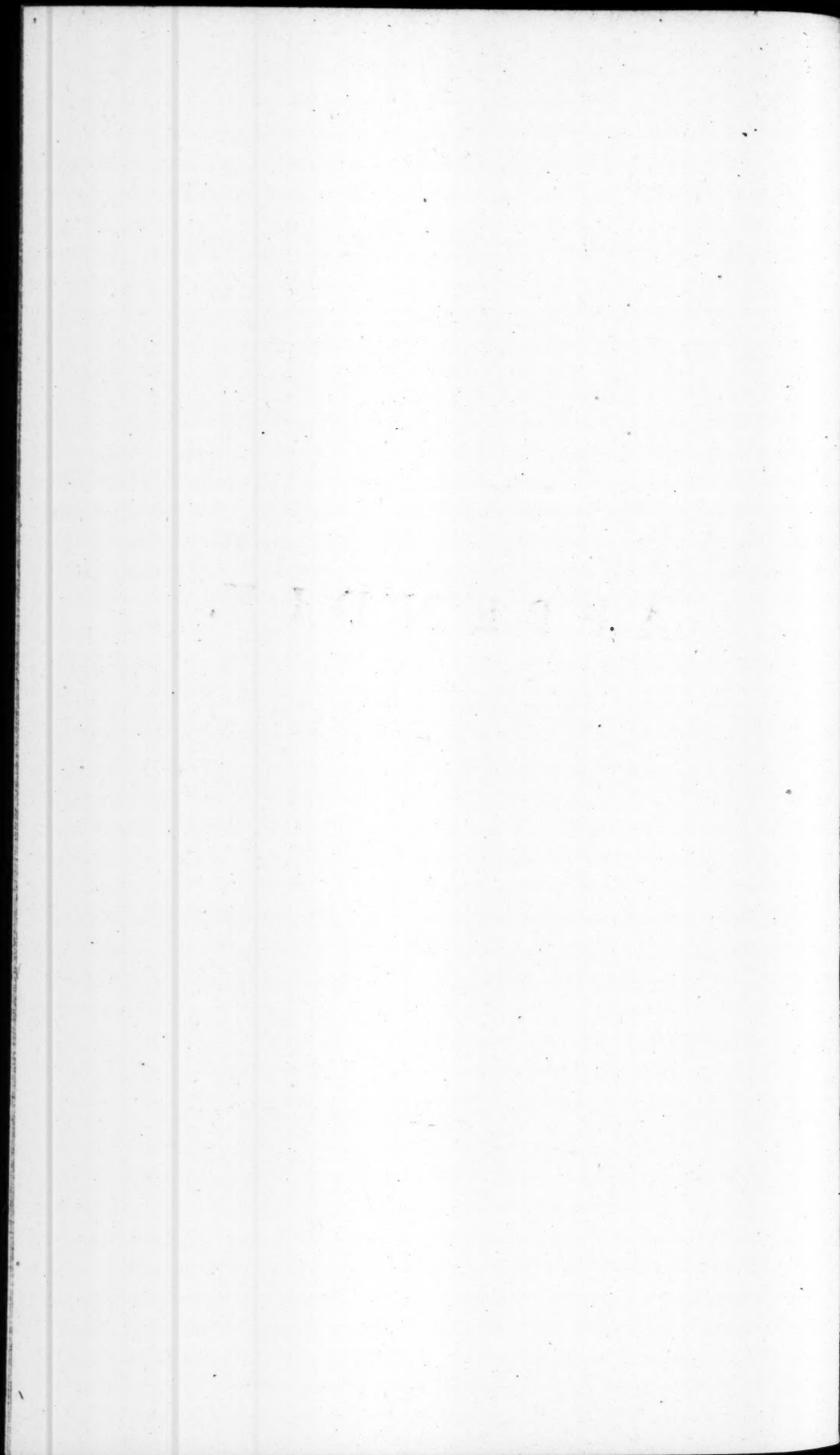
I cannot forbear expressing a truly grateful sense of my obligations to these gentlemen for seconding my endeavours, and confirming them by their great and allowed authorities. Their positions and assertions come fully to the point ; and I rejoice to find my facts admitted and justified by their learned theories, experiments, and observations. The profession are encouraged, by a circumstance of such additional weight, to try this method ; for the result of which I am not under the least degree of apprehension ; but, assured of its efficacy, submit it with confidence to the world.

P O S T S C R I P T.

BEING lately desired by a friend in the country, labouring under a chronic disease, to wait on Dr. Hugh Smith concerning her health, I had a conversation with him at the same time on the foregoing subject of absorption. The Doctor immediately recollecting the effects of an advertised cephalic (mercurial) snuff, mentioned to me the particulars, which I obtained his permission to publish; and esteem it one amongst many other proofs of the medical attention and ingenuity of this gentleman.—This case I communicated to Mr. Cruikshank, and the Reader will find it particularly related by him in the following *Appendix*.

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A P P E N D I X.



A P P E N D I X.

Dr. H U N T E R's

Remarks on the New Method of introducing Mercury into the Circulation.

AS the *external* surface of the body (says the Doctor) is every where bibilous, so is the *internal*. There can be no doubt of absorption taking place on the inside of the mouth, of the *preputium*, of the *labia*, &c. and any fine powder, capable of being absorbed there, will, no doubt, be more readily absorbed when mixed with a watery fluid. When mixed with oil, and applied to wet surfaces, it may be presumed that it will be kept at some distance. It is likewise very probable, that, when the calomel is rubbed upon the surfaces
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of the mouth, what gets into the stomach is carried down so gradually, and diffused over so great a surface, that it will stimulate the *primæ viæ* much less; and people with very tender bowels may therefore bear it much better than when given in pills, boluses, &c. And it is reasonable to suppose, that watery fluids will, in general, be more readily absorbed; perhaps even when applied to the outward surface.

A curious

*A curious Case of a Compound Fracture,
related by Dr. HUNTER at his
Lectures.*

SPEAKING of the nature and cure of *simple* and *compound* fractures, Dr. Hunter observed, in his lectures, that, in treating the *compound*, many surgeons did mischief, and irritated the wound, by their officious and artificial manner of dressing it. Instead of that practice, he recommended treating the *compound*, as much as possible, in the same way as the *simple* fracture : and in confirmation of that practice, used to relate the following singular case, which was always heard with great attention, because the instruction was conveyed in the way of pleasantry.

“ A maniacal patient, Mr. G—, who was confined in the Infirmary at Edinburgh,” (he says it was about thirty years ago) “ seeming to have recovered a calm and rational state of mind, was allowed

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to take an airing in the garden by himself. Here he took the resolution of making his escape; and got over the garden wall. In dropping himself from the wall, which was very high, he pulled a large cape-stone along with him, and suffered a very bad *compound* fracture in his leg. He was carried round, and lodged again in the Infirmary, in this unhappy condition; and the surgeon, who was presently brought to him, set the leg, dressed the wound, applied the eighteen-tailed bandage, &c. in the usual way. After all this, the patient appearing to be very calm, the surgeon gave some proper directions, went away, and the patient was left alone to get some rest, which was thought proper, and seemed to be his own desire. His madness now took a singularly whimsical turn: he knew very well that he had got a miserably broken leg; but his crazy imagination made him believe, that the surgeon had mistaken the leg, had bestowed all his cunning upon the

found

sound leg, which required no attention, and had left the shattered limb to shift for itself. Under this firm persuasion, convinced that his surgeon was too ignorant to perceive his blunder, too conceited to be set right, and too proud to suffer such humiliation, he thought it would be most prudent, in his present state of subjection, for the cure of his broken leg, to make the best use he could, of the judgment and dexterity which God had given him. He removed the whole *apparatus* from the broken leg, with great attention, that he might be able to apply it to the other leg, so exactly in the same manner, that the surgeon should not be able to discover the alteration; and, lest any suspicion should arise, and lead to an inquiry and discovery, he thought he should be still more secure, by secreting or hiding the other leg, that it might not be found, and appear in evidence against him. He therefore tore a large hole in the sheet and featherbed, and

buried the wounded leg among the feathers.

Next day, when the surgeon visited him, he said, that for a while he had been in pain, but that by a fortunate and accidental motion of the foot, the pain went off, as by a charm; that he had continued perfectly easy ever since; and therefore was resolved to keep it as steadily as possible in the same situation. The surgeon finding him easy, the pulse quiet, and no symptom whatever of fever, went to the foot of the bed, and lifting up the clothes, said, Let us just see how the foot and leg look. The patient seemed much alarmed with the proposal, and entreated him, for mercy's sake, to desist; because, he said, the least motion in the world would disturb it, and bring all his pains back again. The surgeon assured him that the bed-clothes touched nothing but the cradle, and that the lifting of them up could not in the least move either the
leg

leg or foot; and then, observing to the students that the appearance of the foot was as favourable as he could wish, he expressed his satisfaction, and went away. Every day's visit, after this, turned out equally satisfactory, both to the surgeon and patient, till the fifth or sixth day, when the surgeon grew very anxious to see the wound, lest any lurking mischief should be concealed, and was determined to remove the dressings. This the patient resisted, first with prayers, and then with imprecations and rage; but at last he was obliged to submit. The surgeon, with a cautious and tender hand, removed the bandages, and, as he went on, expressed the pleasure which he felt on seeing the skin, both above and below the wound, in so natural a condition. At length he lifted up the dressings, which he found were quite loose, and, seeing a leg now perfectly sound, which, a few days before, he had seen in such a lamentable state, you can better conceive than I can tell how

how he looked. After a short pause, he passed his fingers along the *tibia*, and then said, I only know that a fracture and wound there certainly was, and now there is certainly neither. Presently he recovered himself enough to recollect that it was the other leg which he had set and dressed; and said, Where is the other leg? turning off the bed-clothes at the same time. Lunaticks are quick in resources, not easily put out of countenance, and imagine that no body can doubt what they assert. Mr. G——, sensible now that the leg would be discovered, drew it out from among the feathers, saying, with great expression of resentment and rage, that he would now expose the surgeon's ignorance to the whole world; that he always knew surgeons to be a set of ignorant fellows, though they wore large wigs; and now he would prove it, by a shocking instance, to the satisfaction of all present. This leg, said he, holding out the broken leg, with a great cake
of

of blood and feathers crufted over and round the wound, this leg, thank God! is as found as any man's :—there, pointing to the other, is the broken leg,—you fee what a desperate condition it is in ;—and that fellow, being called, did nothing for it :—he was called to fet a broken leg ; but he did not know a broken leg, and bound up this. After venting fome more of his indignation and rage in farcaftic and coarfe language, he begged that fome of the young furgeons would bind up his broken leg again (meaning the found one) for that it was in great pain, was much difturbed with this impertinent examination, and, if not taken care of, would make him a miferable object, at beft a cripple for life. The furgeon feeing his patient's imagination fo ftrongly perverted, and being convinced by the agitation which that mifapprehenfion had raifed, that it would be, upon the whole, fafer to indulge him in his wild conceit, with humanity as well

as good sense, desired the young men to humour him, by putting the *apparatus* on the sound leg. From that time he was calm, and, in all other things, reasonable. The cure went on with perfect success;—the scab of feathers at last dropped off;—the wound was then found to be healed, and the callus compleated: A memorable lesson for surgeons, and a striking instance of the weakness of human reason, of the imperfection of our boasted art, and of the power of Nature!"

Mr.

Mr. CRUIKSHANK'S
Remarks on the New Method of introducing Mercury into the Circulation.

To Mr. CLARE, Surgeon.

SIR,

WHEN you shewed me your *Essay on the Cure of Abscesses by Caustic; and on your New Method of introducing Mercury into the Circulation by means of the Absorption, which takes place from the Inside of the Mouth,* you were so obliging as to desire my opinion on the latter of these subjects. While there is the least probability that my opinion may be of use to any gentleman of the profession, I hope I shall never appear reserved, or unnecessarily cautious, in giving it. The *absorbent system* has, for some years past, particularly engaged my attention; nothing in the smallest degree connected with it could possibly meet with indifference from me. Common civility would have intitled you to any opinion

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I could form on your subject ; but when I considered you as having been formerly a pupil of Dr. Hunter's, my situation with him made it impossible for me to suppose myself not connected with the idea of being obliged to do every thing in my power to serve his former as well as our present pupils. My first communications to you, on the absorption of calomel from the mouth, were much more concentrated than they now appear ; but finding you wished they might be made public, I thought my duty to the public obliged me to be somewhat more diffuse. — I own I am much disposed to believe that your method of rubbing calomel will be attended with success. One thing I have no doubt of, it will throw light on the modern doctrine of absorption ; and it may lead to still further important discoveries. It recommends itself to me from the following considerations.

1. That calomel, rubbed on the inside of the mouth, will be absorbed,

appears

appears extremely probable from analogy. But, that I may be the better understood, let me premise a few things.

About twelve months ago, I had an opportunity of seeing, for the first time, the orifices of the absorbents, on the internal surface of the human intestines. The person had died suddenly about four in the morning, and was opened two days after. It was in the month of January, and extremely cold; so that the body was still very fresh, and fit for any observation. The intestines and mesentery were covered with lacteals, turgid with chyle, which was coagulated into a very firm jelly. The mesenteric glands themselves were perfectly white, from the quantity of chyle they contained. In a portion of this intestine, subjected to the microscope in a strong light, I saw distinctly a number of orifices on the tops of the villi, particularly where the villi were perfectly white, and distended, as it were, from chyle. These orifices appeared clearly

to be in a bulbous extremity, belonging to the lacteal of the villus; and their diameters were considerably larger than those of the particles of blood seen under the same microscope. I had a drawing made of this appearance, and shewed these orifices to Dr. Hunter, Dr. Jebb, and several others of my anatomical friends, and am perfectly satisfied I was not deceived.

The manner in which absorption is begun has not yet been explained; it may also be expected that I should say something on that head. Leiberkühn, whose description of the beginnings of the lacteals is something like mine, supposes a great part of the villus to be of the nature of sponge; he describes the orifices which I have seen, but makes them much less numerous, observing that it is seldom there is more than one orifice to the spongy body, which he calls Ampullula; and which he considers rather as an appendage to, than the beginning of, the lacteal: now, in the bulbous extremity
which

which I have delineated, there appeared about twenty or thirty orifices. Again, he leaves you to suppose that the ampullula, as a sponge, drinks up the chyle, and squeezes it into the orifice of the lacteal which lies behind it. Dr. Fordyce, in his *Natural History of the Human Body*, compares the absorbent vessel to a capillary tube, and supposes that absorption is begun in consequence of a power in the vessel, similar to capillary attraction; that, after this, it is carried on by the muscular powers of the absorbent. Mr. Hunter is disposed to consider the absorbent vessel in the light of a living animal, and thinks it may take up fluids or solids as a leech, for example, or a caterpillar, would take up their food. I think it not improbable it may be in the following way: The absorbents have fibrous coats, are irritable, and muscular. Muscular parts, stimulated, contract; and having contracted, if in a sound state, must, from their own nature, be presently relaxed. Whatever is to be absorbed is applied to
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the absorbing surfaces, either by the pressure of the external atmosphere, by the peristaltic motion of the stomach and intestines, by the motions of respiration, pulsation of neighbouring arteries, or, in short, by the contraction of muscular parts in general. This matter coming into contact with the orifice of an absorbent, stimulates it; the first effect of this stimulus is to make it contract, it of course takes up less space, and the fluid, or whatever it is, rushes forward; the absorbent now dilating would form a vacuum, the fluid must, therefore, rush into its orifice, and, stimulating it a second time, obliges it to contract; this contraction not only propells what has entered the absorbent, but makes room for a fresh quantity to come forward; and in this way perhaps is the matter to be absorbed, taken up from surfaces and carried into the blood. Now the particles of the blood, seen in the *simple microscope*, are at least ten times larger than

than those of levigated calomel, yet I have had many opportunities of seeing the absorbents turgid with red blood. The particles of quicksilver, in the best prepared mercurial ointment, are, in the same microscope, as distant as the particles of the blood; and, we all know, they are very readily taken up by the absorbents of the skin. By a written communication of Dr. Smith's * to you, I am informed, that about twelve or fifteen years ago, a medicinal snuff was advertised, in London, and recommended for the cure of scorbutic and cutaneous diseases. This was tried by a person who had some complaints of those kinds; from its use his mouth became sore; a salivation, and other symptoms usually consequent to a course of mercury, ensued. In two other instances, the Doctor found the application of *mercurius emeticus flavus*, as a sternutatory, was attended with the same effects. The *white precipitate*,

* Dr. Smith of Bridge-street, Black-friars.

applied

applied in form of ointment to the head, with a view to destroy certain animalcules, has been blamed, (with what justice I shall not pretend to say) on account of its having sometimes produced salivation. From experiments of Mr. Hunter's, published in his brother's Medical Commentaries, it appears, that powdered indigo was in a very little time absorbed by the lacteals. The absorbent system is as extensive as the arterial. Why should not the particles of levigated calomel be absorbed, from the inside of the mouth, as well as those of divided quicksilver, from the skin? of *mercurius emeticus*, from Schneider's membrane? or of powdered indigo, from the intestines? If it shall afterwards appear, that your calomel is applied to the orifices of the absorbents, partly in a state of solution in the saliva, the probability of its being absorbed from the mouth will be still greater. The particles of levigated calomel are not much coarser, I presume, than those of its *precipitate* by the volatile alkali;
but

but this *precipitate*, we are certain, may be absorbed from the external surface of the body; why may not the calomel be absorbed from the inside of the mouth? Mr. Hunter has frequently directed calomel to be rubbed on the skin, along with the volatile liniment; and seen it have the effects of mercurial ointment. The volatile alkali in the liniment, it is true, decomposes the calomel; but still the precipitate is a black mercurial powder, which, it appears, may be absorbed, and which acts as the calomel itself would have done. This very powder, I know, is employed in some parts of the West Indies as an excellent dressing to venereal sores, having every effect of mercury on these sores. It is extremely probable, that, mixed with saliva, it might make a good mercurial ointment; or might be exhibited internally with as good effects as the calomel itself*. However this may be, I am well assured,

* It has, indeed, been suspected to be nothing else, than the crude quicksilver itself in the state of a prodigiously minute powder.

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that,

that, in order to avoid the trouble and save the time employed in making the common mercurial ointment, it is usual with some surgeons to precipitate mercury from the nitrous acid, by means of the volatile alkali; this precipitate, like that from the calomel, is also in form of a black powder, which, after it has been repeatedly washed, and dried, is mixed with hogs-lard, and forms *their* mercurial ointment. This is said to have the same, nay, better effects, than the merely divided quicksilver. The earth of mercury, in *mercurius calcinatus*, is one of the best preparations of that metal, yet known, for internal use. With some constitutions, however, it is apt to be too powerful, irritating the stomach and intestines; why should not the earth, got by precipitation from an acid menstruum, be equally efficacious, at the same time that it might, perhaps, be milder in its operation? I have often thought, that too little had been done, by men of real abilities, in the way of ascertaining the absolute effects of the different

different preparations of mercury. I do not mean that surgeons should play tricks with their patients, or put their safety on as precarious a footing as the throw of a die, when they could put it on an absolutely certain one; but cases do happen where experiments might be made with perfect safety to the patient; or the surgeon, having first cautiously tried the effect of a preparation on himself, might afterwards, finding that it answered his expectations, recommend it, in the fullest confidence, to his patient. I am led to this reflection from finding some practitioners placing the greatest confidence in two of the precipitates of mercury just mentioned, whilst others affirm, they are absolutely insignificant*.

2. The surface, on which you propose the calomel shall be rubbed, is, in its own nature, a better absorbing sur-

* Till more proper names shall be given to these two black precipitates, might not that from the nitre of mercury be named *mercurius præcipitatus niger*; whilst that from calomel might be stiled, *mercurius pulveratus*?

face than, perhaps, any other accessible to friction in the body. It is now generally allowed, that every surface in the body, every cell, absorbs; but it appears also, that the absorbents are by no means equally active, and that, like arteries and veins, they too, from the application of stronger stimuli, may be excited to greater activity. The stimulus of the chyle and lymph on the orifices and coats of the absorbents, is, I presume, the ordinary cause of absorption; but the stimulus of any substance, capable of being absorbed, may be equally a cause of absorption, nay, may be sometimes a more exciting cause than the common one. The cuticle (or scarf-skin) is itself not vascular, inorganic, and insensible. It not only makes an external covering to the body, but it lines some internal cavities, as the mouth, the nose, the œsophagus. It is every where porous, but these pores are probably of various diameters; and in some parts, I should also presume, it might be more porous, in others less so.

for. This cuticle is also thicker in
 some places, and thinner in others.
 There is a greater secretion on thin
 cuticular surfaces, and of course they
 may be supposed more porous. The
 absorbents lie under it, and must be
 stimulated through it. Absorption may
 take place through the thickest cuti-
 cular surface, especially if severe and
 constant friction be employed. A
 porter, for example, shall be engaged
 for two or three days in rubbing down
 quicksilver with hogs-lard in a mortar,
 and from working the pestle, the upper
 end of which is every now and then
 smeared with a little of the ointment,
 he shall have fetid breath and sore gums,
 (the ordinary effect of mercurial fric-
 tion), shewing that absorption had taken
 place from one of the thickest cuticular
 surfaces, the palms of his hands. Tho'
 absorption may take place from such a
 surface, yet in general the thinner the
 cuticular surface is, the closer will the
 matter, to be absorbed, be applied to the
 mouths

mouths and coats of the absorbents, and stimulating them more readily, will be sooner absorbed. Thus venereal matter, applied under the prepuce in men, or on the inside of the labium in women, gets sooner into the inguinal glands, sooner into the habit, than if it had been applied to the outside of either parts. A little child, in her maid's arms, received a kiss from a girl of the town, who accidentally passed by. The cuticular covering is remarkably thin on the edge of the lips, and allowing the blood to appear more readily through it, gives them their greater redness. A chancre, on the projecting part of the under-lip, was the consequence of this salute; which, in a few days, made its appearance, and resisted every application for a fortnight or more. At last it yielded to mercury; and thus shewing itself to be venereal, recalled the circumstance of the kiss, which, but for this, had passed unnoticed. Had the venereal matter been applied to the cheek,

cheek, externally, it is probable, from what we see daily, that it might have lain some time without producing any effect, and at last have been wiped off; or at least that it would not have produced a chancre sooner than in a fortnight, or even six weeks. If the poison makes its way more quickly, from an inside or thin cuticular surface, why should not its antidote do the same thing? Why should not mercury get sooner into the habit from the inside of the mouth than from the outside of the thigh? That the inside of the mouth is a surface better fitted for absorption than any other within the reach of friction, may possibly be denied by some. How can a glandular, secreting surface, might they say, a surface constantly pouring out, and which, of course, may be presumed to wash off every thing laid on it, be a good absorbing surface? Whatever force this reasoning may seem to have, when applied to dead surfaces, it must lose its weight with those who reflect,

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that

that the surface under consideration is a living one. For if it was a good objection against the fitness for absorbing in a surface, that it was a secreting one; the very same objection lies against most surfaces, and may be urged against the best absorbing surface of the body, the internal surface of the intestines.

3. The absorption of calomel from the inside of the mouth, in your method, appears, from the testimony of many of your patients, undeniable. For if your patients rub three grains of calomel every day on the inside of the mouth, and it does not gripe or purge; and if the common effect of three grains, taken into the stomach, is, that it certainly gripes and purges; then we must conclude, that the three grains, given in your way, have not gone into the stomach, whilst their producing evident effects on the disease, for which they were exhibited, shews, that they have certainly got into the habit; or, in
other

other words, that they have been absorbed by the surface to which they were applied. One of your patients informs me, that he saw you weigh eight grains of calomel, that he employed all this quantity, in your way, at once; and that he went through this process three succeeding mornings without being sick, griped, or purged. On what other supposition, shall we be able to say, why these eight grains of calomel did not purge or gripe, but that, having been absorbed from the mouth, they became milder in their operation, in the same way as we know the divided quicksilver becomes milder when absorbed by the skin.

4. If calomel may be absorbed in your way, it must be the most eligible method, because it is less apt to irritate the stomach and intestines, and, by purging, to destroy its proper effect, than it would be if its first action was to be immediately on these parts. There

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are some preparations of mercury which may be taken into the stomach without irritating too much, provided opium is exhibited along with them; but there are many constitutions which will not bear opium, and if mercury cannot be exhibited properly without it, patients possessed of such constitutions must be extremely unfortunate, especially if to the former peculiarity of habit is joined another, viz. an antipathy in the skin to every thing oily. How many, originally vigorous, deduce their present weak bowels, and crazy constitutions, from the mischief occasioned by the action of mercury on the *primæ viæ*! Now, whether the calomel is here absorbed from the mouth, or not, supposing it actually goes into the stomach, but that the circumstance of its being given in a liquid form, diffuses its particular stimulus, or that this stimulus is blunted by its ropy vehicle the saliva, and that thus only it becomes milder in its operation; still the fact is, that it really

really is milder, and of course, as the medicine is allowed to be equally efficacious, this method is to be preferred to any other mode of exhibiting mercury internally.

With those who believe that the calomel is actually absorbed from the inside of the mouth, and that it does not pass into the stomach and intestines, there will be still less doubt with respect to the propriety of employing this method rather than the giving calomel, or indeed any other commonly prescribed preparation of mercury, in form of draught, bolus, or pill; for though these preparations, taken into the stomach and intestines, may sometimes be absorbed from their internal surface as well as from any other, yet, from the greater irritability of these surfaces, the stimulus of the calomel, or of the other preparations, is more likely to prove too great; to produce sickness, griping, and purging, and to

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occasion

occasion their being hurled out of the body before sufficient time has been allowed for their absorption. In this way the remedy runs a greater risk of being entirely lost, and of producing as little effect on the disease, for which it was exhibited, as the Peruvian bark would do on an intermittent, if, instead of staying in the stomach, it was constantly running off by stool. Or though it should not actually purge, yet, from its particular stimulus, the digestive organs, with whose state the functions of the body are so much connected, are more apt to be thrown into disorder; during which period, the attempts of Nature to relieve herself against any disease, if not altogether prevented, must, at least, be extremely imperfect. On the contrary, if calomel is rubbed on the inside of the mouth, it is applied to a surface, which happens to be alternately exposed to heat and cold, and to considerable friction in chewing our food and cleaning our teeth; of course
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to a less irritable surface, and capable even of bearing moderate friction. The calomel will here be mixed with the saliva during the friction, will be diffused over the whole mouth, and absorbed from the inside of the lips, surfaces of the tongue, roof of the mouth and fauces, as well as of the cheeks. Thus, its first effects will not be in the way of stimulus on the *primæ viæ*, but it will be gradually and equally applied to the general system. Dr. Hunter gives a remarkable instance of excessive irritability in the stomach and intestines, and of the great advantage gained by being able to introduce the divided quicksilver into the system from another surface, viz. the surface of the skin, after every attempt to make it be taken up by the former more irritable surfaces had been ineffectual. A gentleman, who had a venereal ulcer in his throat, and nodes on his bones, was passing through London in his way to Spain, with a view of obtaining in that warmer climate, and from the Lisbon diet-

diet-drink, the cure which he had despaired of in his own country, and from mercury. He had tried mercury, internally, in every form, and in the smallest doses; but it constantly produced severe gripings, and bloody stools. Dr. Hunter prevailed on him to delay his intended voyage, and to try the effect of keeping his chamber, and rubbing mercurial ointment on the skin. This, at first, had the same effect as the former trials; produced, even in this way, again, the gripings and bloody stools. But, by wrapping him in flannel, and confining him to the more constant and equal warmth of his bed, so as to take off that determination to the intestines, which cold, applied to the surface of the body, is apt to produce, and persisting in the use of gentle mercurial frictions, he was at last perfectly cured. If the divided quicksilver thus became milder in its operation, why should not the calomel be improved from a similar treatment?

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The particular stimulus of mercury on the more irritable surfaces of the stomach and intestines, and the effects on the whole body, more immediately consequent to this stimulus, may be prevented then, by avoiding these surfaces, and obliging the mercury to find its way into the system through another set of absorbents. I suspect it is also in this way Art has been able to introduce morbid matter itself into the body, so as to make the effects less hazardous than those which Nature left to herself more frequently produces. The advantage, for example, gained over the natural small-pox, by inoculation, is, perhaps, principally to be deduced from this circumstance, that the morbid matter, in the natural small-pox, is applied, in great quantity, in form of vapour, to the mouth, nostrils, lungs, stomach, and intestines, and stimulating these irritable surfaces into great irregularity of action, at the same time that it is absorbed from them, produces, as it were,

were, a double disease : whereas, in the inoculated small-pox, the morbid matter is applied in small quantity to a small part of the skin, produces its effects gradually, and falls equally on the whole system. This sort of reasoning does not, I know, correspond with the ideas of the more eminent modern physiologists, who think particular contagions, like particular acids or alkalis, are always the same; and produce different effects only in consequence of the bodies, to which they are applied, happening to be different. They maintain, that the quantity of morbid matter, applied to bodies, signifies nothing; that, supposing the thousandth part of a grain of variolous matter produces a hundred small-pox, a pint or a gallon of this matter would produce no more; that, at the end of the small-pox, there is a greater quantity of variolous matter in the system than ever, and yet it is then perfectly harmless, and has lost the power of irritating. They have also

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observed,

observed, that patients recover of putrid fevers in hospitals, surrounded by others, in every stage of that disease. I have some suspicions, however, that even particular contagions may have different degrees of virulence, according as they are communicated by one body or another, at one period of the disease or another. I have also my doubts, whether the quantity of morbid matter applied is altogether immaterial. For if, after infection, the symptoms following depended on the nature of the infection, conjoined with the state of the body, in which the infection found the patient, then the strongest men should constantly have the mildest disease; which by no means agrees with daily observation. The plague produces its effects, not according to the state of the person it invades, but, as Mr. Hunter observes, it brings every kind of body to the same state on the first attack; symptoms of putrefaction, in all sorts of constitutions, immediately taking

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place.

place. This is by no means the case in common fevers; but as the plague is allowed to be a fever, it would look as if febrile matter, though like an acid, (of the same kind) might notwithstanding, like it, be sometimes more, sometimes less concentrated; and might, of course, produce greater or less effects. Some of the most eminent modern inoculators have contended, that when they inoculated with the transparent fluid, found in the scarcely yet formed pustule, they were always more certain of the effect, viz. That the patient would be infected, than when they employed the matter of a perfectly matured pustule. They have also said, that when occasionally the ripe matter had been used, and the infection took place, still the small-pox were later in appearing, were more dangerous, or seemed somehow imperfect. I have no experience of the former method, having never employed the lymph; but my observations so far correspond with theirs, that, in the last

last ten or twelve I have inoculated, where the matter employed was always from the ripe pustule, and inserted by the gentlest puncture, I saw nothing of the eruption till the twelfth or fourteenth day, though the disease was perfectly mild in all of them, and two of these children were inoculated in the third month. Poisons in the same animal seem to be more concentrated at one time of the year than at another, and to depend for their greater effects on the greater action of the vessels of the animal producing them. The viper-catchers are more afraid of the bite of these animals in the months of June and July, than at any other period. The bite of the young rattlesnake, is said to be perfectly harmless, whilst that of a full grown one is commonly mortal. If, in the first method of inoculation, when long and deep incisions, instead of slight punctures, were made, and when, of course, a greater quantity of variolous matter was applied; if, in this instance,

a greater number of small-pox did not follow, the local effects, at least, were frequently terrible; and ill-conditioned, tedious ulcers too often attacked the incised parts. With respect to the observations, that patients have a greater quantity of variolous matter in them at the end of the small-pox than ever was applied to the system before, and that its effects notwithstanding are imperceptible; also, that some patients recover of putrid fever, in the midst of putrid vapour; I have only to reply, that nothing is more evident than the effect of custom: bodies, in time, may be made to live on poison; and the first effects of almost every application to the body, are greater than the subsequent ones. That the variolous matter should now have no effects on the body, is not more unaccountable than our not having the disease twice, or twenty times, instead of once. Some irritations having once acted on us, lose the power of ever affecting us again; and others, though

though they may afterwards affect us again, yet the constitution must be altered, with regard to them, and must have returned to its former state, before infection, ere it can be acted on again. That all infectious vapour is at first chiefly applied to the more irritable surfaces of the stomach and intestines, and that its first action is upon them, seems more than probable. I have often observed, that students of anatomy were seized with *diarrhæa*, as soon as they began their dissections. This, I presume, is the effect of swallowing the putrid effluvia along with the saliva. Nature here, as every where else, seems still attentive to the preservation of her productions; for the *diarrhæa* is, probably, a fortunate circumstance; and, did not the putrid matter stimulate the intestines, so much as to occasion its own discharge, it might be absorbed, and produce *putrid fever*. I know it has been urged, that the effluvia of dead bodies were not infectious; that the longevity

longevity of many anatomists proves this ; that the *diarrhœa* may be attributed to the cold of the dissecting room, which stands on a ground-floor, and, for obvious reasons, is laid with bricks. I am not so absurd as to pretend, that mere stench will give a fever, or that every dead body is infectious ; but it has never been denied, that this same matter, inserted in a wound, will frequently produce fever. Now, if the inserted matter produces fever, and if effluvia are generally more active than the parts which remain behind ; if the effluvia of the small-pox matter appears more active than the liquid matter itself ; can we suppose the putrid effluvia of dead bodies perfectly harmless ? If this matter is infectious, it may be said, why are not dissecting pupils commonly attacked with fever ? They sometimes are ; there have been some notorious instances which prove this. I own it happens less frequently than might be expected ; so it happens in great hospitals,

tals, the physicians and pupils are but rarely, the nurses almost never, attacked with fever, though the effluvia are confessedly infectious. In both instances the constitution is gradually accustomed to these effluvia, which of course lose their power of irritating it. The *diarrhæa* cannot be attributed to cold. Mr. Cline* informs me, it is as frequent amongst his pupils, tho' the dissecting-room is laid with wood, situated in an upper story, and constantly warmed by a large fire. That many great anatomists have been long-lived, is no proof that the effluvia of dead bodies will not produce fever. Many intended anatomists may, on the other hand, have died unheard of in early life. As well might it be urged, that because some men, having gradually accustomed themselves to drink brandy, can at last take a couple of bottles a-day without appearing intoxicated, or receiving any sensible detriment; that therefore a glass of brandy will not intoxicate some, and a couple of

* Mr. Cline of St. Thomas's Hospital.

bottles infallibly kill others *. The indigestion, want of appetite, loathing of food, and uneasy sensation in the stomach and intestines, preceding fever, may possibly arise from the putrid miasmata acting particularly on those parts. There are not wanting eminent practitioners in physic, who, from observation, insist, that nothing tends more to destroy putrid fever, on its first attack, than emptying the intestinal tube. The

* Nothing less than the strongest conviction of its truth, and the belief that I am furnishing the physician with a new and important fact in medicine, could induce me to support an opinion contrary to that of my great master, Dr. Hunter; who thinks, that, tho' the effluvia from the living body are infectious, they lose that property on the body's becoming dead.—He admits, that some part of the fluid matter of a dead body, inserted into a wound, will often produce fever; but then, he compares it to the saliva of a mad dog, which, applied to a wound, produces hydrophobia; but which may be touched with impunity; which probably never is vapour; or, if it is, is, in that state, perfectly inoffensive. I am not aware, that giving a contrary opinion, in public, can deter students from their duty; or make them more afraid of looking into the dead body. We all know, that fevers may be caught at hospitals, from the living body; yet physicians do not complain of want of pupils; and he would be reckoned a sorry student, who would not do his duty at the risk of his health.—Does the chance of being shot, prevent men from enlisting as soldiers? Do not physicians still acquire fortunes from attending the sick in the plague itself? Besides, the authority of the anatomist will be insufficient to convince the pupil of the inoffensive nature of putrid vapour, whilst he feels his own nature revolt at it, and his other preceptors in medicine maintain a contrary doctrine.

dysentery,

dysentery, caught by infection, is uniformly treated in this way. In the West Indies, it is notorious, that in most fevers, unless the bowels are kept open all the while the fever lasts, the patient is certainly lost; and from this circumstance it is, that the cathartic antimony is there held in such high reputation. The purging, sometimes preceding the eruption of the small-pox and measles, also contributes to favour this idea. It was hardly possible to avoid this getting out of my road, as it were; the good effects of treating mercury, and variolous matter, in the same way, were so striking! Now, we return to the calomel.

5. Your friction of calomel is a less tedious, less laborious process, than the common one of rubbing mercurial ointment. To be obliged to rub, with their own hands, half a dram of mercurial ointment, for half an hour every night, is a labour only to be conceived by those

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who

who have experienced it. Nothing is more universally complained of. What must it be when half an ounce, or even a whole ounce, is rubbed? The process, in short, frequently tires the patient so much, that he gives it over before it is half performed; and sometimes omits it, when it ought to have been done. It requires considerable force; and, if the patient is very weak, will, to him, be labour in vain. I am persuaded, that patients frequently miss of a cure from these very circumstances. Let us suppose fifteen grains of mercurial ointment equal in effect to one grain of calomel. This calculation, I presume, will not be thought unfair by those who have given both quantities, on different occasions, to venereal patients; and have observed, that they could go on with the calomel, for twelve or fifteen days, sensibly gaining on the disease: whereas, when the ointment was employed, it became necessary, long before the end of this period, to increase the dose, in order

order to keep up the first effects. If a patient, then, must either rub fifteen grains of common mercurial ointment, or rub a grain of calomel, and is allowed, after trying both ways, to choose for himself; there will be little doubt with respect to his choice. For though all surfaces absorb, and any surface may be stimulated to absorb more than it commonly does, (from some sudden change in the constitution, producing a general and a greater stimulus on the absorbent system, the whole water of an ascites may, for instance, be absorbed in three days); yet, in common, surfaces seem to tire, (if one might say so) and, like muscles, having performed a certain quantity of work, refuse to do more. At least, we find, by experience, that mercurial ointment is taken up more quickly by the absorbents from diffusing it over a large surface, or by changing surfaces. Mercurial ointment, of course, being more bulky, and more viscid, than calomel and saliva, will require a larger

surface, and a longer time, before it can be sufficiently rubbed ; or, in the common style, before it can be rubbed in. Now if, according to our calculation, three grains of calomel have as great an effect on the venereal virus as forty-five grains of mercurial ointment, and if it would require half an hour's strong friction to make these forty-five grains be absorbed from the whole inside of the thigh, while three grains of calomel, gently rubbed on the inside of the mouth, may be absorbed in a quarter of an hour ; who does not perceive the advantage of employing calomel rather than mercurial ointment ?

6. Your method also recommends itself as a neater and more convenient one, than the rubbing mercurial ointment. The friction of mercurial ointment on the thighs or arms, is, to many people, one of the most disagreeable things in the world. Its leaden colour, contrasted with the skin, makes it look dirty.

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It has a particularly offensive smell, independent of that of the turpentine, or balsam of sulphur, which may have been employed in extinguishing the quicksilver. From the difficulty attending the rubbing, the skin is generally left a little smeared with it, after the process is over; as it is oily, it does not evaporate, or dry, readily; and will easily stick to whatever it touches. Patients are obliged to sleep in flannel drawers, to prevent the ointment from getting through, and daubing the bed-clothes. They must be frequently changing these drawers; constantly washing the skin; or, as washing off the ointment would retard rather than forward the cure, they must remain dirty for six weeks, or perhaps three months together; and if, by accident, any part of the ointment gets upon their linen, from its colour it is very apt to give the alarm in families, and lead to disagreeable discoveries.

7. Your method is better, *cæteris paribus*, than the common modes of exhibiting

exhibiting mercury internally, in as much as it employs friction. Thin as the cuticular surface is, to which the calomel is applied, friction seems by no means unnecessary ; and I should doubt much if the allowing the powder to lie on the surface, or the mere keeping it in the mouth for ever so long a time, would be attended with the same success. For though I have no idea that friction forces the calomel into the orifices of the absorbents, yet I am convinced that the stimulus of the friction, joined to that of the calomel, makes them take up the mercury more certainly, and more quickly. It will not be easy, on any other principle, to say, why, in dropical patients, frequent frictions should sometimes bring about the absorption of the extravasated fluids in the cellular membrane of the legs ; add to this, that, in friction, the matter to be absorbed is certainly more closely applied to the orifices of the absorbents. There are many habits in which mercurial

rial ointment would never eradicate the venereal virus, were it laid on the skin instead of being rubbed on it. I have sometimes found the cure of venereal sores at a stand, in cases where the friction had been performed by the hands of delicate or indolent patients; but, on employing the servants, and defending their hands with oil-skin gloves, the mercury has been brought immediately to the mouth, and the cure, beyond controversy, not only secured, but much accelerated. May not the want of this sort of friction in the stomach and intestines, and the circumstance of the mercury's being obliged to lie on these surfaces till it is absorbed, render it probable that less of the mercury is there absorbed, and, of course, give the external friction of mercury, independent of the other considerations, the superiority over its internal use? Dr. Hunter suspects, that the friction of mercurial ointment facilitates its absorption, by dividing it still more minutely, and re-

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ducing its particles to such a size, as makes them capable of being absorbed.

8. Your method appears preferable to the rubbing mercurial ointment, in as much as watery fluids may be presumed to be more readily absorbed than oils, have not some of the disagreeable qualities of oils, and that there are some reasons to believe that saliva and mercury make a more efficacious compound than mercury and oil. The vapour, or exhalation from the external surface of the body, probably passes by the same pores in the cuticle through which the absorption is made, and may be presumed to bedew the extremities of the absorbents, keeping them perpetually moist. This exhalation is either mere water, or substances combined or mixed with water; so that the body may be said to be surrounded with a watery atmosphere of its own vapours. This may be supposed to repel, in some degree, the introduction of oil into the body, by preventing it from

from coming in contact with the orifices of the absorbents. But as saliva approaches more to the nature of a watery than an oily fluid, it will be more readily absorbed than hogs-lard. That saliva may be more readily absorbed by the skin than hogs-lard, may be granted me; but that saliva should be readily absorbed by the same surface which secreted it, (the inside of the mouth) may seem improbable. Let it be remembered, however, that the absorbents are intermingled with the arteries; and that one set of vessels frequently take back what has been poured out by the other. Thus, if the secreted milk is not sucked from a woman's breasts, it is soon taken back by the absorbents; and either from its uncommon stimulus, or from distending the axillary glands, inflames them; shewing, at the same time, the road it had taken. Bile secreted in the follicles of the liver, and not readily carried off by the *pori bilarii*, is taken up by the absorbents, and thrown into the blood, pervades the whole body, producing

R jaundice,

jaundice, even when there is not the least obstruction in the hepatic or cystic ducts. If urine is detained in the bladder, after the stimulus for making water has been given, it will quickly be carried back into the blood, and be obliged to pass the kidneys a second time. Saliva, by itself, might not be absorbed from the mouth, as giving no stimulus, and passing quickly into the stomach, is not detained long on that surface; but combined with mercury and detained, it certainly may. Again, saliva (or, where that might seem indelicate, the synovia of cows or sheep) will occasionally agree better with the skin than oil. There are some skins which seem to have an antipathy to oil. A patient of mine, from rubbing half a dram of the strong mercurial ointment, two successive nights, on the inside of the thighs, had an erysipelatous inflammation spreading all over the abdomen, over the parts of generation, and upper parts of the thighs. This was followed by excoriation.

ation of all these parts, a leprous-like crust, and a thin discharge, with puffing in some parts of the skin. The parts seemed to me to be verging fast to mortification. I was obliged to desist from the mercury; to throw in an ounce and a half of the bark in substance daily; give a couple of grains of opium every night; and dress externally with flour. In a few days he got well of the inflammation. I now exhibited the *mercurius calcinatus* internally, with all the success I could have wished. But as he had a chancre about the *corona glandis*, and found it troublesome to uncover it in order to dress it, I was willing to give him as little to do this way as possible; and ventured to introduce a feather, smeared with mercurial ointment, under the prepuce, as a dressing for the chancre, twice a day. After one night the erysipelas was about to be re-produced; nay, the inflammation had actually begun on the body of the penis. I again desisted from the mercurial

rial ointment, went on with the internal use of mercury, and sarsaparilla; and in a few weeks he was perfectly cured. Here, it is evident, it was not mercury which disagreed with the habit, nor friction; for, on the second trial, no friction had been employed. I could place the inflammation only to the account of the oil. It may seem strange to deduce an inflammation from so bland a fluid as oil, and yet here it will be difficult to find another cause. Mr. Payne*, from whom my patient had the mercurial ointment, assures me he never uses turpentine or balsam of sulphur to facilitate the division of the quicksilver in making his mercurial ointment, but, at the beginning, employs for that purpose mutton-suet only. It is possible the hogs-lard in mercurial ointment may soon become rancid; and that it was not oil, but rancid oil, which produced this effect. Rancid hogs-lard undoubtedly breaks

* Apothecary in Coventry-street, Haymarket.

down the quicksilver sooner than fresh lard, and may be a temptation now and then to save time and labour. Here this does not seem to have been the case. Mutton-suet was here employed on account of its greater hardness, and the recent lard added afterwards. Besides, if the effects had been owing to rancidity in the oil, of which the mercurial ointment was made, I am afraid we should see them oftener. At any rate, if this oil is apt to become rancid, and in this state is to be introduced into the blood, this very circumstance will be a sufficient motive, with the thinking practitioner, to prefer saliva, synovia, or any other equally convenient, but more healthy, vehicle *.

Further, Mr. Hunter, from some experiments made on himself, thinks it

* Though mercury, applied to the skin, and passing through its absorbents, appears, generally, to act more mildly on the system; yet, I can also conceive such a constitution of the skin, that this general rule may, from that circumstance, be reversed; and that the stomach and intestines may, now and then, bear the stimulus of the mercury better than the skin.

probable,

probable, that every preparation of mercury is dissolved in the human fluids, and converted, not only into a new preparation, but constantly into the same kind of preparation, before it acts on the venereal virus in the system. He takes it for granted, that we cannot taste any thing till it is applied in solution to the tongue: that powdered glass, for example, would give no taste, as perfectly insoluble in almost any fluid; but quicksilver itself, held a considerable time in the mouth, gave at last the brassy taste, and must, of course, have been previously dissolved in the saliva. Corrosive sublimate, calomel, *mercurius calcinatus*, treated in this way, also gave the same taste. The human saliva, probably, dissolves many other metals besides quicksilver. Pure copper leaves a very nauseous taste in the mouth; and gold, applied but for a few minutes to the tongue, may be tasted long after it has been spit out. If there is a probability that the calomel, during the friction, in
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your method, is in part dissolved in the saliva; it may, on this account, be supposed, not only to be more easily absorbed, but also to be applied to the system directly in its most efficacious form. It is not, perhaps, necessary that mercury should be in a state of solution in the body, in order that it should destroy the venereal virus. I can conceive mercury, very minutely divided, stimulating the system, and acting on the venereal virus, from its mere presence. Rhubarb seems to purge and pass the kidneys unchanged, as appears from the yellow tinge it still gives the urine, or linen dipt in it. It is more probable, however, that substances, capable of solution in the human fluids, will, upon the whole, have a greater effect than those which are not. I was anxious to discover the state in which mercury existed in the human fluids; and chemically to demonstrate, if possible, that saliva and serum actually did or did not dissolve quicksilver, and its different preparations.

preparations. The probable methods of detecting mercury, I imagined, were the following. First, If it existed in the fluids as merely divided quicksilver, I thought I might find it by examining these fluids (particularly when dried and powdered) in the microscope, or by exposing these fluids in different situations to gold, silver, brass, or tin foil. I particularly depended on gold, which unites immediately with this metal, and becomes white. Secondly, If the mercury existed in these fluids in the form of a salt or corrosion, I had still some expectation of finding it, by precipitating it from its *menstruum*, by means of the volatile or fixt alkalis, which throw down nothing from common serum or saliva, but are known to precipitate mercury from acids. If corrosive sublimate, for example, is dissolved in water, on the addition of volatile alkali, the mercury falls to the bottom in form of a white powder, and, on adding the fixt vegetable alkali, becomes redish or yellow. If
nitre

nitre of mercury is dissolved in water, on adding volatile alkali, the mercury falls to the bottom in form of a black powder; but, by adding the fix'd vegetable alkali, falls in form of a white one. If saliva or serum contained mercury in a state of solution, or as a salt, I therefore thought it probable that they might part with the mercury to an alkali, or possibly even to an acid; for the muriatic acid will take mercury from the nitrous, and fall to the bottom in water, as a corrosive sublimate in form of a white powder. Thirdly, I found by experiment, that I could detect mercury mingled with certain substances in the state of cinnabar, calx, or corrosion, by burning the substance containing it on a red hot iron: for in this process the mercury parting with its acid or sulphur, and receiving phlogiston from the heated iron, is revived into running mercury or quicksilver.

The precipitates of mercury from the nitrous acid, and from corrosive subli-

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mate in calomel by the volatile alkali *, I also found by experiment were already in the state of divided quicksilver and amalgamated gold, and would as readily be discovered as the mercurial globules of the ointment, providing they had undergone no change in the body. I have made a great many experiments on this curious subject, but the result has not been such as to leave it in my power to conclude any thing positively at present. The field I found more extensive than I was at first aware of; the experiments required great accuracy, and frequent repetition; and a very small alteration in the mode of repeating them sometimes led to a conclusion very different from the former; so that, after some pains, I was still obliged to rest satisfied with probability. I am inclined, however, upon the whole, rather to think, with Mr. Hunter, that the mercury is in the human fluids in the form of a new salt;

* Though volatile alkali does not readily part with its phlogiston, and is therefore not inflammable, it appears, however, in the situations mentioned, to part with it to the calces of mercury.

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since gold, &c. were not amalgamated by these fluids obtained in such a state as made them be presumed to be fully saturated (if one might say so) with mercury. The gold was not even tinged white in any one place, either when macerated in these fluids for hours, nor when, after they had been dried and powdered, they were burnt on red hot iron, and the vapours received through an inverted glass funnel on the surface of that metal *.

The saliva of a man who had rubbed in near seven ounces of the strong mercurial ointment, and whose mouth notwithstanding had been but a few days sore, shewed no marks of containing quicksilver. Nor was I more successful in attempting to find it in the blood of a person who had rubbed about six

* In one experiment there appeared some white spots on the guinea, which, on putting it into the fire, disappeared: these were owing, *I believe*, to mercurial vapours; but as this experiment was not confirmed by succeeding ones, I was afraid I had been deceived, and have left the point to be determined by some future trials.

ounces, though he then spit but little, nor had any other secretion been apparently encreased. The urine of a person who had used still more of the ointment did not appear to contain divided quicksilver, nor was it sensibly different from other urine.

As the globules of quicksilver in the strong mercurial ointment were still visible in the microscope, I could not see, supposing the mercury taken into the blood, and that it there underwent no change, why it should not be still in some degree visible in the microscope. I examined the blood of the person just mentioned as having rubbed six ounces of the strong mercurial ointment; it was not in the least dissolved, but was coagulated into a very firm and large crassamentum. The serum had not the smallest bluish or black taint; the globules of the blood under the microscope had no unusual appearance; nor was there the least
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semblance of any thing extraneous in the liquid blood. Having dried a quantity of the crassamentum, and powdered it, I again submitted it to the microscope, in hopes, that if the quicksilver really existed there, from the circumstance of powdering the blood, the particles might have an opportunity of running together perhaps, and of course might become more visible; but I found not the least appearance of mercury.

In whatever state mercury exists in the blood, I have some suspicions that it always exhales from the body, after its action is over, in the form of running mercury; and that it may not only be decomposed, but somehow acquire phlogiston in the human fluids. I am very much deceived if I have not repeatedly seen gold rings on the fingers, gold watches, and money in the pockets, become white and black from corrosive sublimate, calomel, or *mercurius calcinatus*, exhibited by the mouth. Now,
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as neither corrosive sublimate, calomel, nor *mercurius calcinatus*, in their own form, or mixed with water, have the least effect in dissolving gold; if ever they acquire this property, it must be by being revived into quicksilver. The corrosive sublimate must part with its acid, and receive phlogiston, in order to become quicksilver; the calomel must also be decomposed, and, losing its acid, must, in like manner, receive phlogiston before it can be revived; and the *mercurius calcinatus*, without parting with any thing, has only to receive phlogiston in order to its being again converted into its original quicksilver. As the heat of the human body, in a sound state, is seldom above 96° of Fahrenheit's thermometer; as feverish heat itself, is only 108° , and as mercury does not boil, or become entirely vapour, at a less degree of heat than 600° ; it may seem impossible that it should ever exhale from the surface of the human body. Some of our ancestors, and even
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A few of the moderns, are of this opinion, though for other reasons; and hence the report that mercury lies in the body, and has been found in considerable quantity after death in the cavities of the bones in venereal patients. They imagined, perhaps, that though the quicksilver was kept divided by the oil, with which it was joined, before it entered the body, yet on its getting there, the oil became more fluid, and gave the quicksilver globules an opportunity of falling down, re-uniting, and forming larger masses, which by their weight forced their way into the cavities of the bones; and having once placed them there, they knew of no powers in the machine which could remove them. I have never seen any mercury in the bones, nor in any other part, in the dead bodies of venereal patients, and am persuaded that mercury does not remain any considerable time in the system. Dr. Fordyce I think proves, in his chemical lectures, that all the metals are, at times, in form of vapour in the

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bowels

bowels of the earth; he also informed us, that mercurial globules had been found adhering to the top of the tube of a barometer, though it had been fixed immoveable to the walls of the house for many years. If some ores of cinabar are placed in a very moderate degree of heat, the mercurial globules will sweat out and form considerable drops on their external surfaces. Though mercury requires 600° to make it boil, yet like water it may perhaps be wholly converted into vapour without ever coming near the boiling point, or even in a degree of heat little more than that of the atmosphere; the evaporation indeed will be slower, and perhaps require a considerable time before it is sensible. Again, though mercury may require a greater degree of heat to convert it into vapour when in a large mass, yet when the attraction of its particles for one another is in some degree diminished by division, may it not then become vapour in a smaller degree of heat?

9. Your

9. Your method of rubbing calomel looks as if it would be a more expeditious way of giving the mercurial stimulus to the system, and of eradicating the venereal virus. One of your patients informed me that he formerly had a chancre under the prepuce; that you had removed it by making him rub a white powder on the inside of his cheek. The effect of the first friction, he said, was, that his mouth became sore and his breath fetid in about six hours after; that his mouth continued so sore that he could not use the friction again for some days; that he only used it four times, but that it always affected his mouth as at first; (so that rubbing twelve grains took him up a month or more); that the chancre mended from the moment his mouth became sore; and that he got perfectly cured from this quantity, and in this manner only. This is a very striking case, but standing single will not amount to proof. One grain of mercury may do more

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with one man than fifty with another. I have been told of a lady who was salivated by taking a quarter of a grain of calomel only. But if your friction *shall generally be found* to have this effect, (for I perceive from your book that you had not *formerly* trusted entirely to the friction) it will go a great way to prove that the affecting the mouth is the chief thing in curing the venereal disease; that the quantity of mercury in the system is of no importance, provided the mouth is affected; in short, that acting immediately on the mouth is the quickest and best method of cure; that there is a kind of connection between the state of the salivary glands and the venereal irritation; and that inflaming these glands to a certain degree and for a certain period (like cutting upon a node) will destroy the venereal irritation; that calomel rubbed on or near these glands is the most proper substance for producing this inflammation; and that much mer-
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cury is not necessary to the cure of the first stage of lues venerea.

10. My experiments, so far as they go, confirm your practice. I have not been a mere speculist in your affair: though I have not had a fair opportunity of trying your method in curing venereal infection, I have endeavoured to ascertain the absorption of calomel from the mouth, the great hinge on which your method turns. The circumstance of my never having taken a grain of any thing mercurial in my life, did not unfit me by any means from being a proper subject for any experiment respecting the operation of mercury on the body. I took three grains of calomel (your dose), and taking it up by little and little, at the intervals of five or six minutes, on the tip of my tongue, applied it gradually to the inside of the cheeks, lips, roof of the mouth, gums, and of course to the body of the tongue itself, till I had spent about

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twenty

twenty minutes or half an hour in this sort of friction, using as much force as my tongue was capable of, and taking care to swallow as little as possible, and particularly not to spit during this process. After the saliva had accumulated in some quantity, still I continued to wash the mouth with it, and to detain the remaining calomel there as long as possible. I am disposed to believe that the increased flow of saliva, providing it is not swallowed or spit out, rather tends to make the calomel be more certainly absorbed; for I have observed, that when calomel had been sprinkled as a dry powder on a chancre under the prepuce, great part of it was still to be found next day from want of sufficient quantity of liquid, as well as of friction, to apply it to the orifices of the absorbents. I used the tongue in preference to the finger, because I found it was less apt to bring a great flow of saliva into the mouth, and of course did not oblige me to swallow or spit.

After

After waiting twenty - eight hours, I found not the least inconvenience from the friction; there was at first a glow upon my gums and cheeks, a brassy taste in my mouth, but never any griping, sickness, or purging; nor did my mouth become sore afterwards. In a day or two after I took three grains of calomel in a small quantity of conserve of hips as a pill, and swallowed it at once. Six hours after it griped me severely and purged. The rubbing on the inside of the mouth I repeated three different times, nor did I find it had any effects different from the first. Mr. Wells from America, one of my medical friends, rubbed the calomel on the inside of his mouth, without perceiving more inconvenience than I did. I think it material that the purging should be avoided, and that the medicine should not thus be lost; to accomplish this, and to secure a total absorption of the calomel from the mouth, it may be applied in smaller doses and at greater intervals; instead of

of taking three grains at once, might not the patient take one grain at three different times daily, making the intervals as long as possible. In this way there would certainly be a greater chance of its being all absorbed, very little would get into the stomach, at least it would be so small a quantity as would not stimulate the stomach or intestines, and would produce no inconvenience. The *mercurius calcinatus* used in this way, or even rubbed on the thigh with synovia, would in all probability have the same effects; both of these preparations however, as the quicksilver, from whence they are formed, are very little if at all soluble in watery menstrua, and of course, unless it is believed that they are soluble in the saliva and blood, may be thought less proper medicines for an animal whose fluids are of the watery kind. Water which had stood a long time on calomel did not become black on adding volatile alkali; nor did *mercurius calcinatus* appear in

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the least diminished for having been a great while in water. If the preparations of mercury, which are most soluble in watery fluids, are likely to prove the most efficacious, then corrosive sublimate and nitre of mercury, as being salts, and perfectly soluble in water, bid fairest for success. Corrosive sublimate is one of the most active preparations of mercury; Van Swieten believed it the best; it is soluble in spirit of wine as well as in water, but swallowed by the mouth sometimes produces the worst of consequences. Nitre of mercury, or the compound of mercury and the nitrous acid, (in its fluid state, said to be Ward's drop) is perhaps still superior to the former in efficacy. Either of these in powder would be too corrosive probably to admit of being rubbed; I see no reason however why a solution of either in water might not be absorbed from the mouth, or even from the feet or hands; and why these solutions should not in this way be milder

milder and more efficacious than they would be were they applied directly to the stomach and intestines. It has been doubted, whether the absorbents would take up solutions of salts? We have already seen, that the calces of mercury are absorbed, and that calomel, which, though not properly a salt, comes very near it, may be taken up, both by the absorbents of the skin and mouth. That solutions of salts may be absorbed, there are numberless proofs. Dr. Hunter gives a remarkable case of some workmen employed to clean a mineral water well: they had for this purpose thrown off their shoes and stockings, and gone into the well; the salts in the water were absorbed by the skin of their feet, and purged them all violently.

Thus, Sir, I have examined, with all the attention and impartiality I was able, the merits of your proposed method of rubbing calomel on the inner surface of the

the mouth. The proposal struck me at first ; I thought it more than probable you would succeed ; nor, on enquiry, do I now find any reason to doubt that you have not succeeded. It may be objected to you, that your method is not new ; other practitioners have rubbed calomel before you. It is possible they have, they have said nothing of it, however, to the world ; and their claiming merit to themselves now, on that score, can have no other effect on you, than that of confirming your practice. It may be alledged, you have not adduced a sufficient number of instances of its success ; it ought to be remembered, however, that it is as easy to *make* a case, were you so inclined, as to assert a fact. You have informed the world of what your practice has convinced you ; and they may disprove it, if they can. Should some objections be even found to lie in practice against your method, (though I own I can foresee none), you will, at any rate, have the merit of having suggested an ingenious idea ; of having done your utmost

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to

to be useful in your profession; and, in all probability, of having laid the foundation of some excellent future practice in surgery.

For myself, I have only to add, that, till your book was in the press, I was equally a stranger to your practice as to your person. I own, that independent of what influence the subject itself had on me, and of the reasons formerly given, another motive, which induced me thus publicly to take up your cause was, the integrity of heart you seemed to me to possess, joined to the circumstance of your having been discouraged in your ingenious research; and that you were left unprotected, in your first attempt, by those from whom, of all others, you had least reason to expect neglect!

London,
Feb. 12, 1779.

I am, Sir,

with sincere regard and esteem,
your obedient humble servant,

WILLIAM CRUIKSHANK.

